ETS | Event Trigger System

IR DOME
IP CAMERA SERIES

OPERATION GUIDE

Please read instructions thoroughly before operation and retain it for future reference.

IMPORTANT SAFEGUARD

All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive, which means our manufacture processes and products are strictly “lead-free” and without the hazardous substances cited in the directive.

The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste. Contact your local dealer for procedures for recycling this equipment.

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Federal Communications Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device mat not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

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Disclaimer

We reserve the right to revise or remove any content in this manual at any time. We do not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of this manual. The content of this manual is subject to change without notice.

This product doesn’t have a standby / off mode.

MPEG4 Licensing

THIS PRODUCT IS LICENSED UNDER THE MPEG4 VISUAL PATENT PORTFOLIO LICENSE FOR THE PERSONAL AND NON-COMMERCIAL USE OF A CONSUMER FOR (i) ENCODING VIDEO IN COMPLIANCE WITH THE MPEG4 VISUAL STANDARD (“MPEG-4 VIDEO”) AND/OR (ii) DECODING MPEG4 VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL AND NON-COMMERCIAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED BY MPEG LA TO PROVIDE MPEG4 VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION INCLUDING THAT RELATING TO PROMOTIONAL INTERNAL AND COMMERCIAL USES AND LICENSING MAY BE OBTAINED FROM MPEG LA, LLC. SEE HTTP://WWW.MPEGLA.COM.

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This product contains codes which are developed by Third-Party-Companies and which are subject to the GNU General Public License (“GPL”) or the GNU Lesser Public License (“LGPL”).

The GPL Code used in this product is released without warranty and is subject to the copyright of the corresponding author.

Further source codes which are subject to the GPL-licenses are available upon request.

We are pleased to provide our modifications to the Linux Kernel, as well as a few new commands, and some tools to get you into the code. The codes are provided on the FTP site, and please download them from the following site or you can refer to your distributor:

Model 1, 2 & 4: http://download.dvrtw.com.tw/GPL/IPCAM/A-Seriers/linux.tar.gz
Model 3: http://download.dvrtw.com.tw/GPL/IPCAM/F-Seriers/linux.tar.gz

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1. OVERVIEW

1.1 Product Features

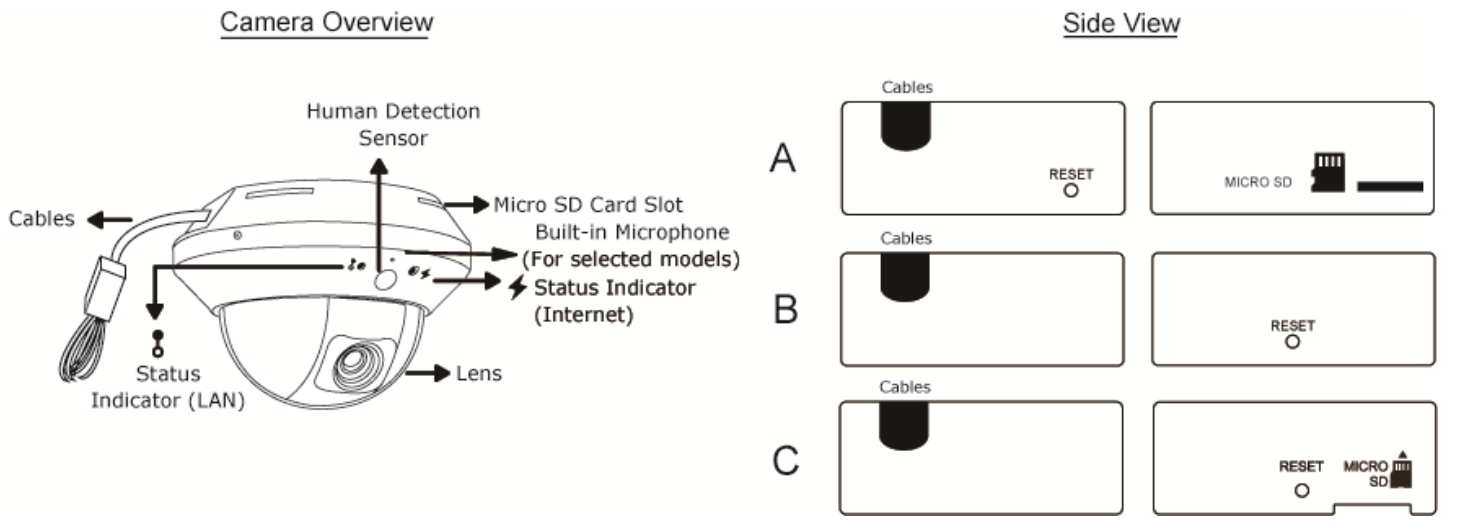
- 1.3 / 2 Megapixel solution with HDTV 720p quality, allowing users to notice minor details more easily
- (For selected models only) 3-axis mechanism for flexible ceiling and wall-mount installation
- POE (Power-over-Ethernet) support to eliminate the use of power cables and reduce installation costs
- ONVIF standard supported to simplify system integration
- External alarm I/O device connection
- (For selected models only) WDR to increase image recognizability in overexposure and dark areas
- (For selected models only) MicroSD card support for video storage
- (For selected models only) Vandal-resistant case to withstand attempts to open or damage the camera
- Remote Surveillance
  -- Full compatibility on iPhone & iPad, and Internet Explorer® on Windows® operating system

1.2 Package Contents

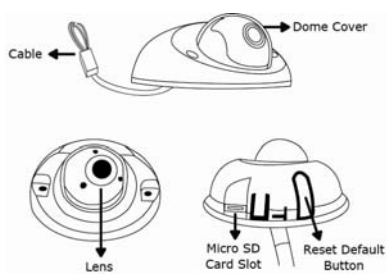
☐ IP camera	☐ Screws & Wall Plugs	☐ Quick Setup

1.3 Product Overview

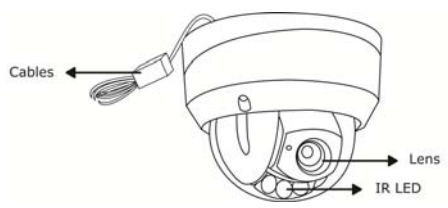
Type 1:



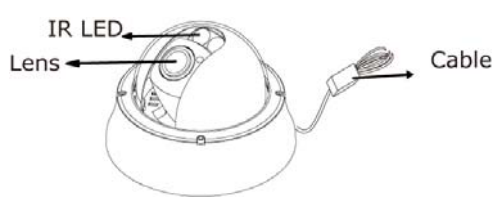
Type 2:



Type 3:



Type 4:



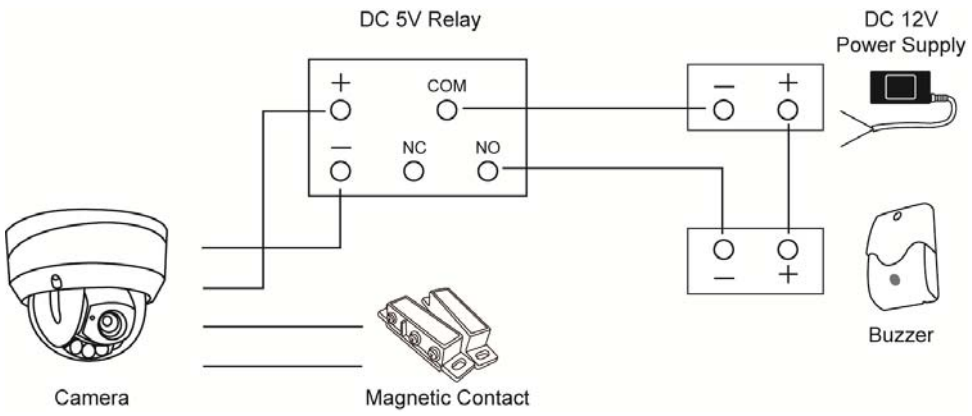
1.4 Connectors

Ethernet:	Connect a RJ45 network cable.
DC IN:	Connect the regulated power supply, DC 5V or 12V depending on the model you have.
RESET:	With the power connected, press to reset all parameters, including the IP address to factory default settings. The camera will reboot after default reset. Please do not disconnect your camera during the reset process.
Alarm in / Alarm out:	For external alarm device connection, please refer to “1.5 External Alarm Connection” at page 2.
Line in (Blue) / Line out (Green)	Support speaker and microphone connection.

1.5 External Alarm Connection

This series of cameras supports external I/O device connection for easy connection.

Below is how to connect an external device to this series.



1.6 Status Indicator (For selected models only)

ICON	LAN connection status	Internet connection status
System Status		
During powering on	Always on	Always on
Reset default	Blinking (on 250 ms, off 250 ms) ●○●○●○●○●○	Always off
Upgrade	Blinking (on 250 ms, off 250 ms) ●○●○●○●○●○	Blinking (on 250 ms, off 250 ms) ●○●○●○●○●○
Connection Status		
LAN connected	Always on	--
LAN disconnected	Blinking (on 100 ms, off 500 ms) ●○○●○○●○○	--
Internet connected	--	Always on
Internet disconnected	--	Blinking (on 100 ms, off 500 ms) ●○○●○○●○○
3G Connection Error on iPhone / iPad / Android Mobile Device		
3G Connection Setting Uncompleted	-- --	Blinking (on 5 sec, off 0.5 sec, on 0.5 sec, off 0.5 sec, on 5 sec) ●●●●○●○●●●●

** LED blinking frequency - ● LED on / ○ LED off*

When the “privacy mode” (for selected models only) is on, the status indicators will blink as the following table illustrates:

ICON	LAN connection status	Internet connection status
System Status		
During powering on	Always on	Always on
Reset default	Blinking (on 250 ms, off 250 ms) ●○●○●○●○●○	Always off
Upgrade	Blinking (on 250 ms, off 250 ms) ●○●○●○●○●○	Blinking (on 250 ms, off 250 ms) ●○●○●○●○●○
Connection Status		
LAN connected	--	--
LAN disconnected	Blinking (on 100 ms, off 500 ms) ●○○●○○●○○	--
Internet connected	--	--
Internet disconnected	--	Blinking (on 100 ms, off 500 ms) ●○○●○○●○○
3G Connection Error on iPhone / iPad / Android Mobile Device		
3G Connection Setting Uncompleted	-- --	Blinking (on 5 sec, off 0.5 sec, on 0.5 sec, off 0.5 sec, on 5 sec) ●●●●○●○●●●●

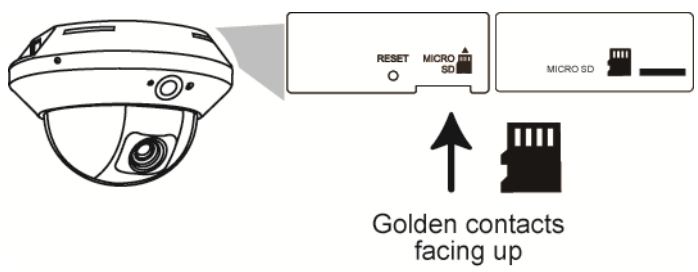
** LED blinking frequency - ● LED on / ○ LED off*

To know more about the privacy mode, please refer to 3.7.1 General at page 26.

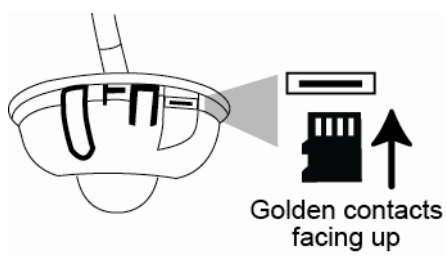
1.7 Insert a Micro SD card (For selected models only)

For local video recording, a micro SD card slot can be found on the camera. The camera doesn't support hot-swapping. Please insert or remove the micro SD card with power disconnected. Please follow the directions in the below graphic to insert Micro SD card properly:

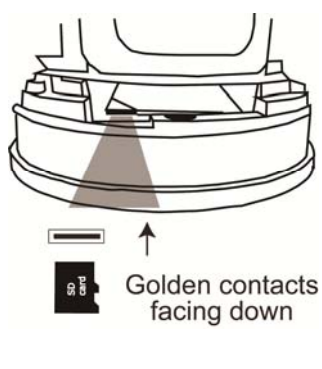
Type 1



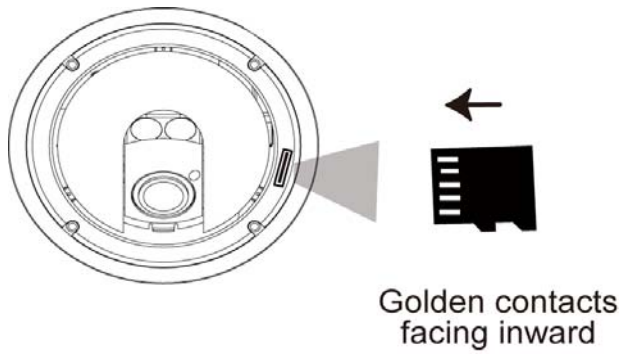
Type 2



Type 3



Type 4



Note: Before inserting a micro SD card, make sure you've copied all important data saved in the card (if any) to other storage media, or all data will be removed after inserting it to the camera.

Note: For the compatible list of the micro SD card, please refer to "APPENDIX 7 MICRO SD CARD COMPATIBLE LIST" at page 40.

2. CAMERA ACCESS WITH INTERNET EXPLORER

This network camera can be accessed via Microsoft® Internet Explorer® and iPhone / iPad / Android mobile devices with our self-developed program “EagleEyes” installed depending on different using situations.

Note: For details about accessing network cameras via iPhone / iPad / Android mobile devices, please refer to http://www.eagleeyescctv.com.

Before using the camera, make sure you have configured the network settings, and the network connection is fine.

For network configurations, please refer to:

- “ADVANCED NETWORK SETUP” downloadable from www.surveillance-download.com/user/m521.swf if your network environment is not wireless.

2.1 Camera Login

Step1: Open your web browser, and key in http://*ipaddress*:*portnum* in the URL address box.

For example, for the IP address 60.121.46.236 and port No. 888, please key in ”http://60.121.46.236:888” into the URL address box, and press “Enter”.

Step2: In the login page, key in the user name and password, and enter the security code from the image below if any. Then, click “LOGIN”.

Step3: The wizard is then started.

- To skip the wizard and directly access the camera live view, click “Close”.
- To directly access the camera live view without starting the wizard for the login next time, check “Do not start wizard at login”.

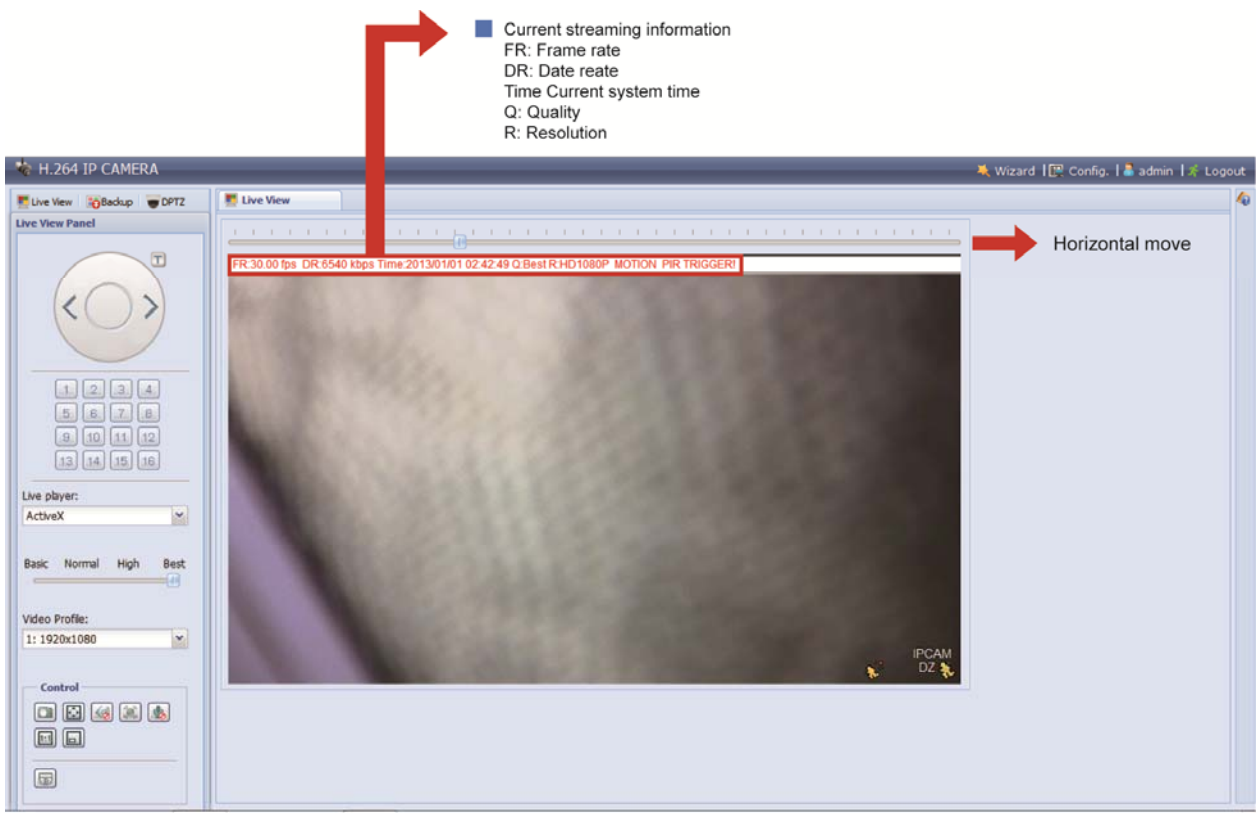
Note: If you’re prompted to install “VLC player”, “Software” or “H264 Streaming Viewer”, please agree to proceed the installation. Or, you might not be able to see the live view properly.

Step4: When the login is successful, the live view is shown.

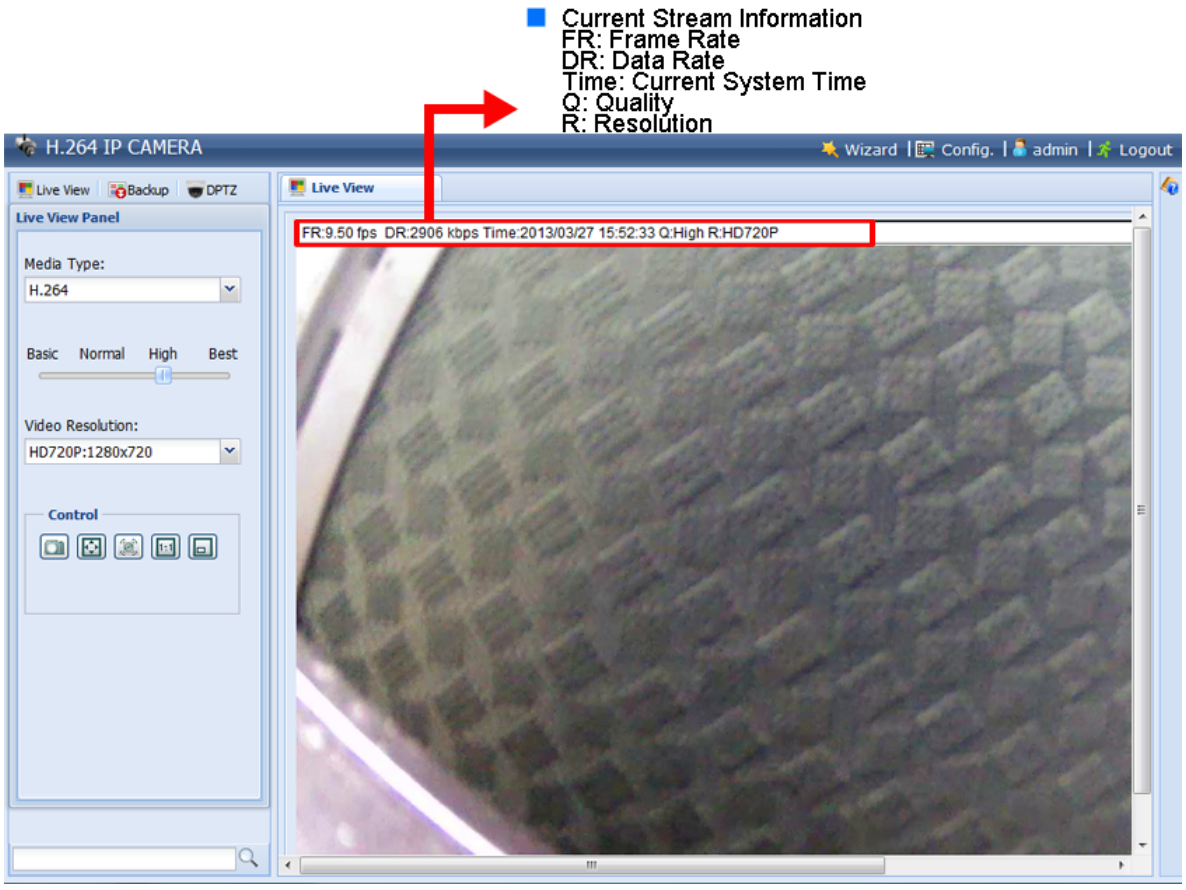
2.2 Control Panel Overview

Note: The buttons available depend on the model number used and the user level used to log in.

➢ Type 1



➢ Type 2



For other buttons, please check the following table.

Function	Icon	User Level	Description
Live		Supervisor / Power User / Normal User / Guest	Switch to the live view page.
Backup		Supervisor / Power User	Enter the event record list for video playback. For details, please refer to “2.4 Event Record Search & Playback’ at page 9.
DPTZ		Supervisor / Power User / Normal User	Switch to the DPTZ configuration page. For details, please refer to “2.3 Digital PTZ (DPTZ) Operations” at page 8.
Config.		Supervisor	Switch to the system configuration page, and the functions available for “Supervisor” and “Power User” are different. For details, please refer to “3.1 System configuration menu” at page 11.
Arrow keys panel	--	Supervisor / Power User / Normal User	Click to move the camera lens up / up-left / down / up-right / left / down-right / right / down-left.
Turbo*		Supervisor / Power User / Normal User	Speed up one mouse-click from 1 to 10. Note: When this function is enabled, the supported buttons will turn to red. Ex: If the value of the turbo step is set to 5, one mouse-click will function as 5 mouse-clicks when you click the arrow keys. To use this function, you need to set it in “General” ➔ “General”.
Preset points*	--	Supervisor / Power User / Normal User	Click the numbering of the preset point you want to move the PTZ camera to the selected preset point. To set preset points, please refer to “3.3.2 Preset (For selected models only)” at page 19.
Live player*	--	Supervisor / Power User / Normal User / Guest	Select the image player from the drop-down list: ■ ActiveX ■ QuickTime QuickTime is Apple Inc.’s multimedia software. You need to have QuickTime installed in your operating system before selecting “QuickTime”. When it is selected, you will be promoted to enter the user name and password to access the camera. ■ VLC
Media Type*	--	Supervisor / Power User / Normal User / Guest	Select the image player from the drop-down list: ■ H.264 / MPEG-4 / Motion JPEG ■ QuickTime QuickTime is Apple Inc.’s multimedia software. You need to have QuickTime installed in your operating system before selecting “QuickTime”. When it is selected, you will be promoted to enter the user name and password to access the camera. ■ VLC
Quality	--	Supervisor / Power User / Normal User	Click & drag the slider to select the video quality: Basic / Normal / High / Best.

Function	Icon	User Level	Description
Video Profile*	--	Supervisor / Power User / Normal User	Select the image resolution from the drop list: ■ 1920 x 1080 ■ 1280 x 720 ■ 720 x 480 ■ 352 x 240
Video Resolution*	--	Supervisor / Power User / Normal User	Select the image resolution from the drop list: ■ SXGA (1280 x 1024) ■ HD720P (1280 x 720) ■ VGA (640 x 480) ■ QVGA (320 x 240)
Live View Size:		Supervisor / Power User / Normal User	
Full Screen			Click to display the image in full screen. To exit the full screen mode, press “Esc” on your keyboard.
Double size			The QVGA resolution is resized to fit into the current live view size. *This icon appears only when the selected resolution is QVGA (320 x 240) or CIF (352 x 240).*
Normal Size			The current live view size is the same as the selected resolution.
Fit to screen			The selected resolution is resized to fit into the current live view size. *This icon doesn’t work when the selected resolution is VGA or QVGA.*
Scale			Click and hold the movable square on the left bottom corner of the live view to move *This icon appears only when the selected resolution is larger than the current live view size.*
Snapshot		Supervisor / Power User / Normal User	Click to take a snapshot of the current view on a new window. Right click on the picture and re-save it to the location you want.
Audio On / Off*		Supervisor / Power User / Normal User	Click to switch the audio-in on / off.
Microphone*		Supervisor	Click to switch the audio-out on / off.
Manual Alarm Out		Supervisor / Power User / Normal User	Click to force the connected alarm-out device to work. For example, when your alarm device is a buzzer, click this button and your buzzer will start to sound even if there’s no alarm event.
Focus Assist*		Supervisor / Power User / Normal User	Click to help you determine whether the image clearness is adjusted well when you're adjusting your camera focus. Two values will be calculated and shown as “XX / YY”. ■ YY is the best focus value for your current camera view ■ XX is your current focus value When XX is closer to YY, the clearer and sharper images you’ll get for your camera view.
Flip*			Select “ON” to rotate the image 180° when necessary.

*Selected models only

2.3 Digital PTZ (DPTZ) Operations

This series of camera has PTZ capability, i.e. digital PTZ (hereafter called “DPTZ”), for wide area monitoring.

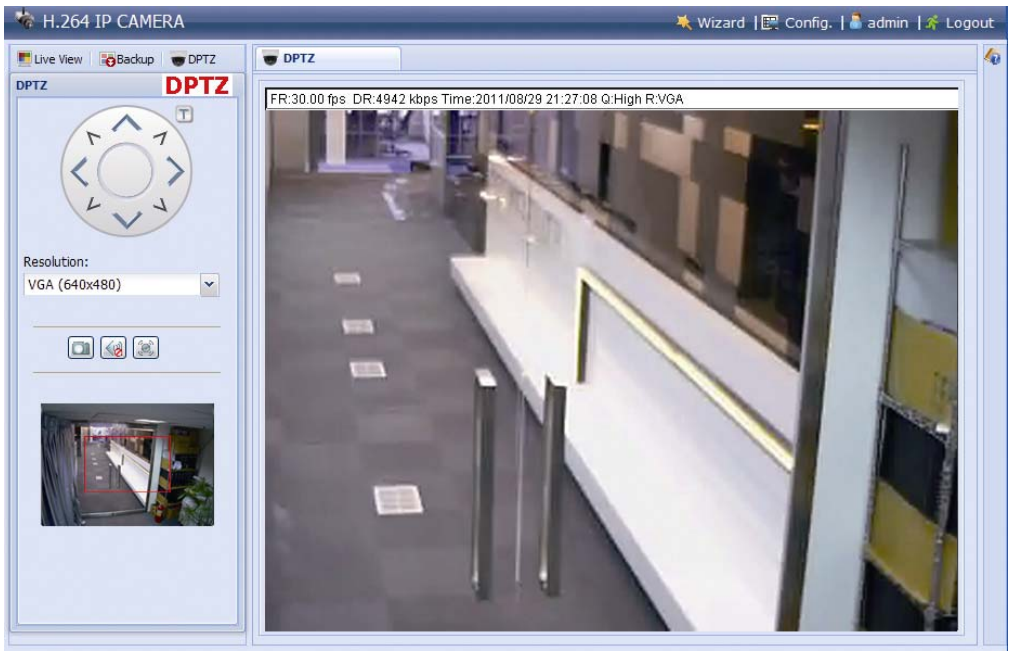
STEP1: Click “DPTZ” to show the DPTZ control panel.

➢ Type1



FUNCTION	ICON	DESCRIPTION
Moving panel	--	When is selected, the moving control panel will be shown to move the picture after zoom-in is performed.
Take snapshots		Click to take a snapshot of the current view on a new window. Right click on the picture and re-save it to the location you want.
Zoom in / out	/	Click once to enlarge the picture by 1X, and click once to restore the zoom ratio by 1X.
Max. zoom in / out	/	Click once to enlarge the picture to the max zoom ratio by 16X, and click once to restore the picture ratio to 1X.
Normal Size		The current live view size is the same as the selected resolution.
Scale		Click and hold the movable square on the left bottom corner of the live view to move *This icon appears only when the selected resolution is larger than the current live view size.*

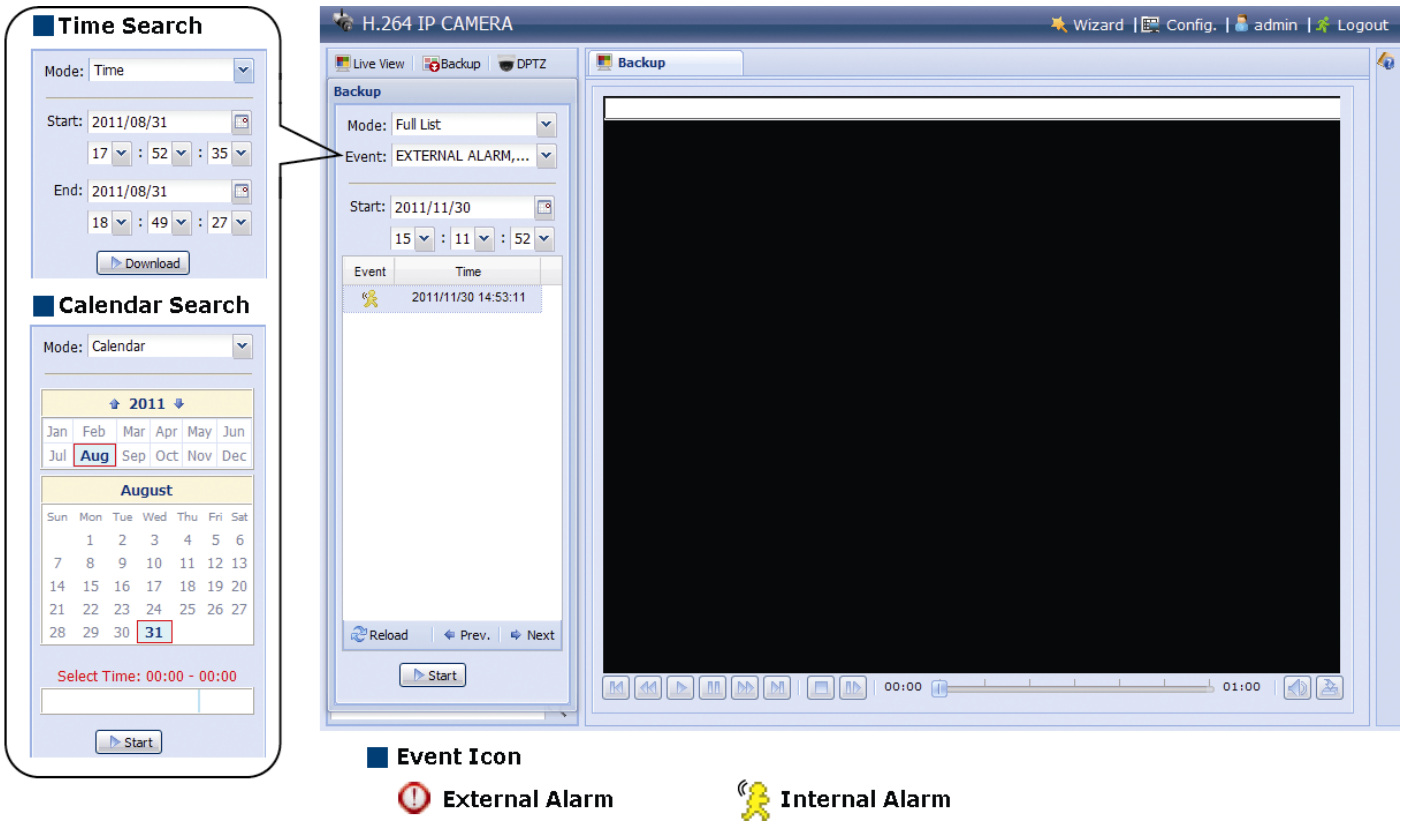
➢ Type 2



FUNCTION	ICON	DESCRIPTION
Resolution	--	Select the video resolution for the DPTZ function. Only “VGA” and “QVGA” are available.
Take snapshots		Click to take a snapshot of the current view on a new window. Right click on the picture and re-save it to the location you want.
Audio On / Off	/	Click to switch the audio-in on / off.
Alarm Out		Click to force the connected alarm-out device to work. For example, when your alarm device is a buzzer, click this button and your buzzer will start to sound even if there’s no alarm event.
Microphone	/	Click to switch the audio-out on / off.

2.4 Event Record Search & Playback

Note: To save more recorded data, it's recommended to use this camera with the compatible NVR.



/	Previous / Next Hour	Click to jump to the next / previous time interval in an hour, for example, 11:00 ~ 12:00 or 14:00 ~ 15:00, and start playing the earliest event video clip recorded during this whole hour.
	Fast Forward	Increase the speed for fast forward. Click to get 2X, 4X, 8X & 16X speed forward eventually.
	Fast Rewind	Increase the speed for fast rewind. Click to get 2X, 4X, 8X & 16X speed rewind eventually.
	Play	Click to play the current video clip.
	Pause	Click to pause the video playback.
	Stop	Click to stop the video playback.
	Step	In the pause mode, click to get one frame forward.
	Audio	Click to mute the playback if necessary, and click again to restore. *This function is available only when a speaker is connected during recording.*
	Download	Click to download the current video clip to the specified path in your PC. *The downloaded video can only be opened by our own video player. Please go to "General" → "Maintenance" to download the video player, or get the player from the CD supplied with the sales package.*

3. CAMERA CONFIGURATIONS

Users can further configure this network camera by accessing via Internet Explorer.

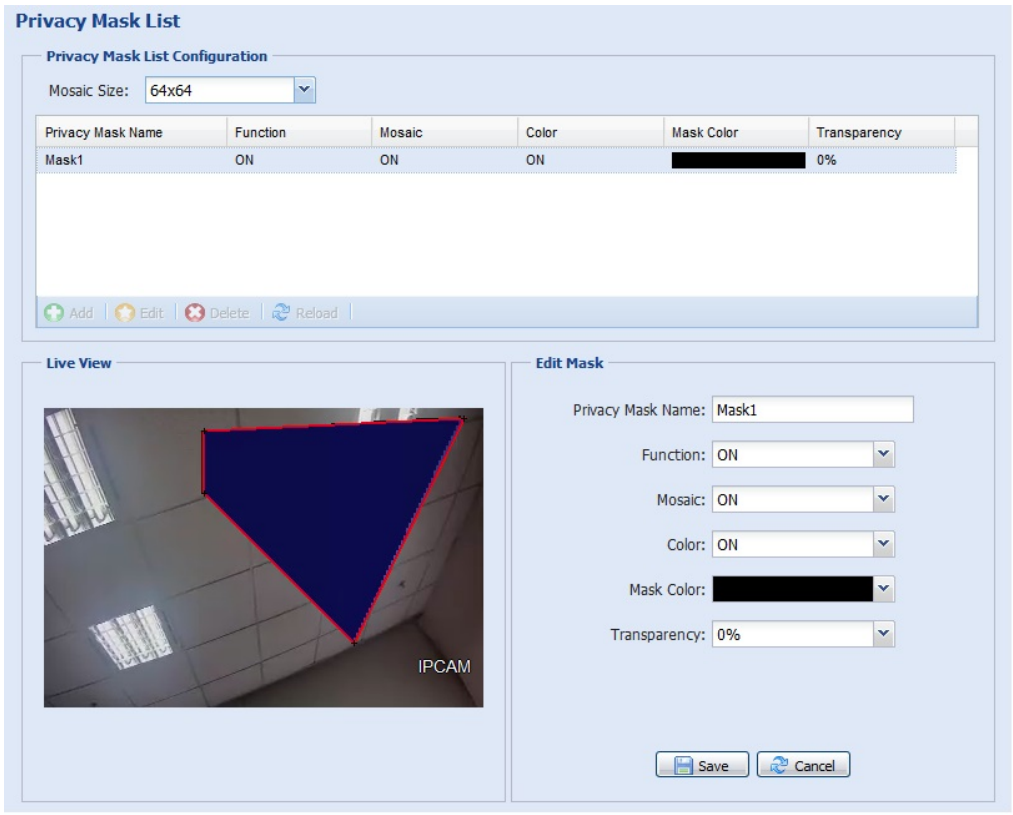
3.1 System configuration menu

Click “Config.” to enter the configuration page.

The functions are categorized into six menus: Network, Camera, Record Timer, Storage, Trigger and General.

- For details about “Network”, please refer to “3.2 Network” at page 12.
- For details about “Camera”, please refer to “3.3 Camera” at page 17.
- For details about “Record”, please refer to “3.3.6 Privacy Mask (For selected models only)

You can cover certain areas on the camera image with privacy masks.



Item	Description
Mosaic Size	Choose the mosaic size of the privacy mask. The options are: 8x8, 32x32, and 64x64.
Privacy Mask Name	Name your privacy mask.
Function	Select “On” to enable the privacy mask function.
Mosaic	Select “ON” to have the mosaic effect.
Color	Select “ON” to color the privacy mask. In the meantime, you can’t see the mosaic effect.
Mask Color	Select the color for the privacy mask.
Transparency	Select the transparency for your privacy mask. The options are: 0%, 25%, 50%, and 100%.

- 3.4 Record” at page 22.
- For details about “Storage”, please refer to “3.5 Storage”’ at page 24.
- For details about “Trigger”, please refer to “3.6 Trigger” at page 25.
- For details about “General”, please refer to “3.7 General” at page 26.

Main Menu	Sub-Menu	Reference
Network	Network	Configure network settings.
	QoS	Limit the data flow for live streaming.
	DDNS	Enter DDNS information when the network type is PPPOE or DHCP.
	SNTP	Synchronize your camera time with the networked computer systems.
	FTP	Enter the FTP information for event notifications when “FTP” is chosen in “Trigger” → “Trigger”.
	Mail	Enter Email information for event notifications when “Email” is chosen in “Trigger” → “Trigger”.
	SMS	Enter text messaging information for SMS notifications when “SMS” is chosen in “Trigger” → “Trigger”.
	Filter	Choose to permit or block the IP address(es) which can access this camera.
	UPnP	**Suitable for Windows-based operating system.* Allow this camera to be detected among devices within the same network area for easy and quick usage.
	Bonjour	**Suitable for Apple Mac-based operating system.* Allow this camera to be detected among devices within the same network area for easy and quick usage.
	RTP	Set the parameters for video data transmission when you’re using multimedia other than web browsers and Video Viewer for remote access.
Camera	Camera	1. Rename the camera. 2. Change the place where the camera name is shown on the screen.
	Preset*	Set the preset points for the DPTZ function.
	Video	Adjust video-related settings in different video format.
	Color	Adjust the color performance.
	Audio*	Adjust the audio volume of the microphone and speaker.
	Advanced	Adjust the camera parameters if necessary.
Record	Record	Configure the record function.
	Record Timer	Schedule external alarm recording.
Storage	Memory	Check the current storage capacity and clear all recorded data when needed.
Trigger	Trigger	1. Enable / disable motion, alarm and PIR detection. 2. Set the motion detection area. 3. Configure how the camera reacts for any event.
General	General	1. Select the language of the web browser. 2. Check the MAC address of the camera. 3. Lock camera access after the specified time. 4. Enable or disable LED status indication.
	Time	Set daylight saving time and the current time.
	Server Log	Check the system event logs.
	Online	Check the current online user(s).
	Account	1. Create a new user account with different access privilege. 2. Modify or delete an existing user account.
	Google Maps	Allow you to know where the network camera is.
	Maintenance	1. Check the current firmware version and upgrade your camera. 2. Copy system configurations. 3. Reboot the camera. 4. Download the video player to play the recorded data.

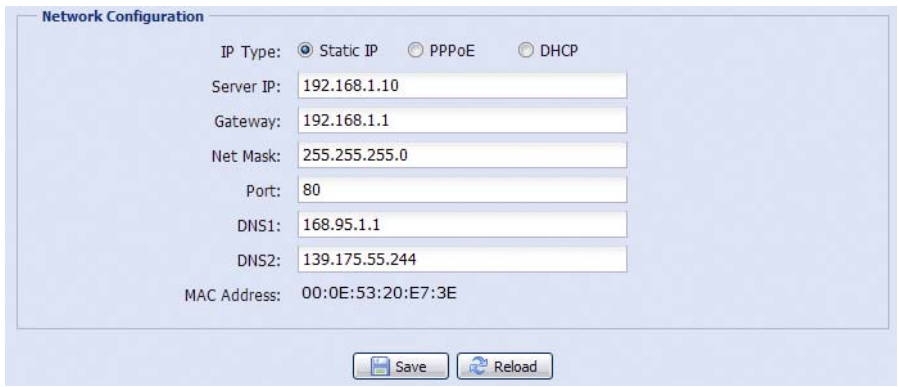
*Selected models only

3.2 Network

3.2.1 Network

You can set the network configuration of the network camera depending on your network type.

For details, please refer to “Advanced Network Setup” from www.surveillance-download.com/user/m521.swf.



3.2.2 QoS

QoS, Quality of Service, is the ability to control the data flow for real-time streaming. This function is important if your network bandwidth is insufficient and you have other devices to share the network bandwidth.
Check “QoS Enable”, and set the max. upload rate from 256 to 10240 kbps.



3.2.3 DDNS

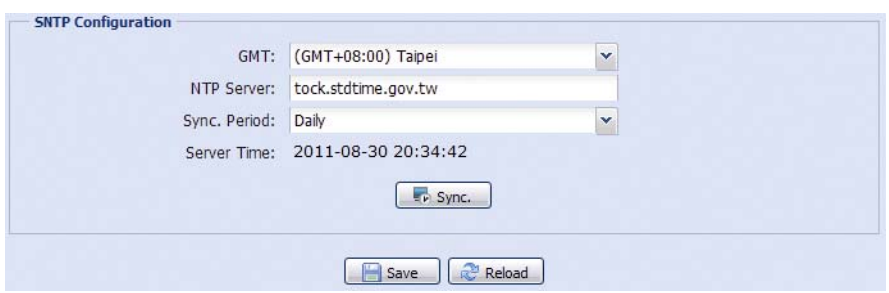
Select “On” when the selected network type in “Network” is “PPPOE” or “DHCP”.

For details, please refer to “Advanced Network Setup” from www.surveillance-download.com/user/m521.swf.



3.2.4 SNTP

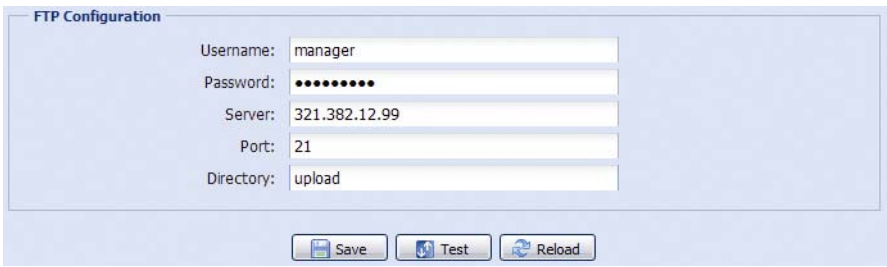
SNTP (Simple Network Time Protocol) is used to synchronize your camera time with the networked computer systems.



Function	Description
GMT	Once users choose the time zone, the network camera will adjust the local area time of the system automatically.
NTP Server	Simply use the default SNTP server (For example, tock.stdtime.gov.tw) or change to another server with which users are familiar.
Sync. Period	Select “Daily” to synchronize the camera time with the network time every day or “None” to turn off this function.
Sync	Click and the network camera will synchronize the time with the network time.

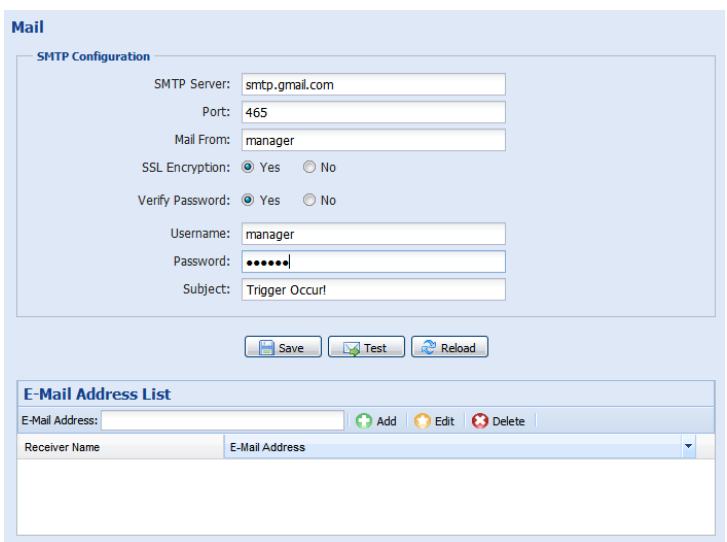
3.2.5 FTP

Enter the detailed FTP information and click “Save” to confirm. The information you set here will be applied when “FTP” is selected in “Trigger” → “Trigger”.



3.2.6 MAIL

Enter the detailed e-mail information and click “Save” to confirm. The information you set here will be applied when “Email” is selected in “Trigger” → “Trigger”.

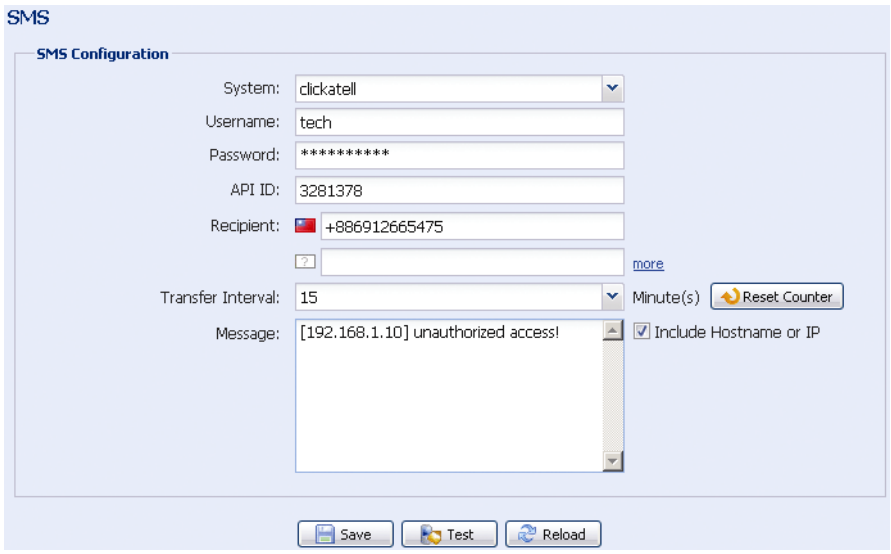


Function	Description
SMTP Server	Enter the SMTP server address provided from your e-mail system supplier.
Port	Enter the port number provided from your e-mail system supplier. If this column is left blank, the e-mail server will use port 25 to send e-mails.
Mail From	Enter the name of the sender.
SSL Encryption	Select “Yes” if your e-mail server is using SSL encryption to protect your e-mail content from unauthorized access.
Verify Password	Some mail servers are required to verify the password. Please enter the “user name” and “password”.
Subject	Enter the subject of the notifying email you want to see when the camera is triggered.
E-Mail Address List	Add the e-mail address(s) of the assigned recipient(s).
Test	When all information is entered, click “Test Mail” to try if the receipt.

3.2.7 SMS

Note: Before using this function, you need to apply an account and get an API ID from the mobile messaging company, such as Clickatell and EVERY8D.For details, please refer to “APPENDIX 4 API ID APPLICATION FOR SMS MESSAGING” at page 36.

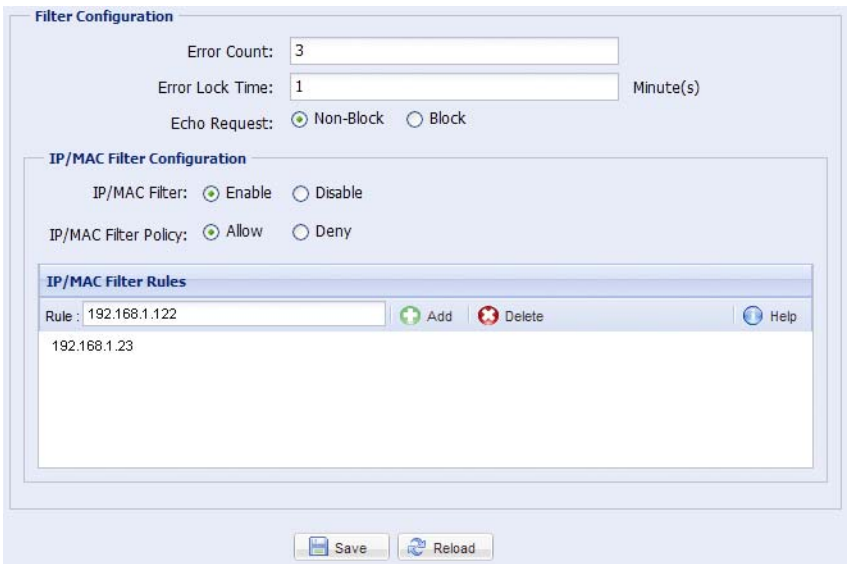
Enter the detailed information needed for text messaging, and click “Save” to confirm. The information you set here will be applied when “SMS” is selected in “General” → "Trigger".



Function	Description
System	The text messaging service provider is Clickatell.
User name / Password	Enter the account user name and password you created in Clickatell.
API ID	Enter the API ID you applied from Clickatell.
Recipient	Click “Add” to enter the phone number, including the country code, to receive the text message. Five sets of phone numbers are allowed.
Transfer Interval	Set the interval time in minutes between two-message sending. The options are 0, 15, 30 & 60.
Reset Counter	Click to restart the text messaging, and the SMS will be sent after the specified time interval since you click this button.
Message	Enter the text content (up to 70 characters) you want to send with the text message.
Test	To know whether your SMS setting is correct, click this button to immediately send a SMS to your phone. Note: This testing is not free and you will be charged for SMS sending base on your local rate.

3.2.8 Filter

Choose to permit or block the IP address(es) which can access this camera, and click “Save” to confirm.



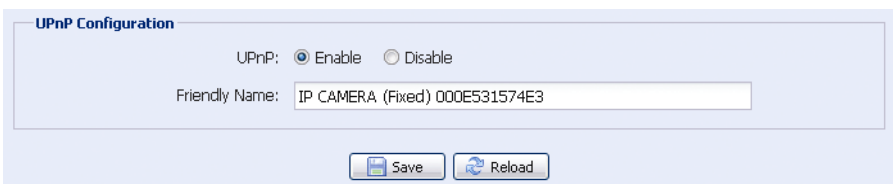
Function	Description
■ **Filter Configuration**	
Error Count	Set the maximum count for login failure. When the maximum count is reached, the IP address trying to access the network camera will be locked.
Error Lock Time	Set the lock time in minutes when the maximum count of error login for an IP address is reached.
Echo Request	Select “Non-Block” to allow other users to use the ping command to detect the IP address of your network camera, or “Block” to deny the ping command request.
■ **IP/MAC Filter Configuration**	
IP/MAC Filter	Choose to enable or disable the filter function.
IP/MAC Filter Policy	If “Enable” is selected, choose whether you want to permit (Allow) or block (Deny) the IP address list below.
■ **IP/MAC Filter Rules**	
Rule	• To add an item to the IP address list, key in the IP address in “Rule”, and click “Add”. • To remove an existing item in the IP address list, click the item you want to remove, and click “Delete”.

3.2.9 UPnP / Bonjour

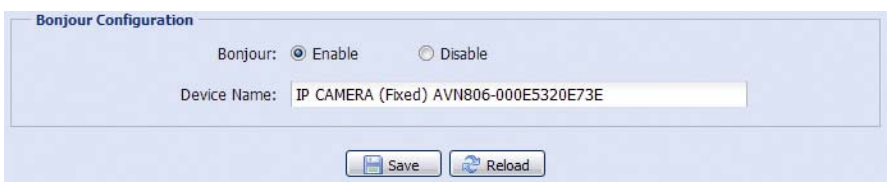
“UPnP” stands for “Universal Plug and Play”, which allows devices to connect seamlessly in the home and corporate environments and simplify installation of computer components, and is only suitable for Microsoft Windows-based operating system.

“Bonjour” functions the same as “UPnP”, but it’s only suitable for Apple Mac-based operating system.

➢ **UPnP**



➢ **Bonjour**



Check “Enable” to allow the network camera to be detected among devices within the same network area, and set the identification name of the camera in “Friendly name”.

When this function is activated, the other PC within the same domain as this camera will be able to search this camera in:

➢ “Network Neighbor” with the identification name set in “Friendly name” for Windows-based PC, or

➢ “ ” (finder) or “Bookmark” with the identification name set in “Device Name” for Mac-based PC.

Double-click it to quickly open the web browser for camera access.

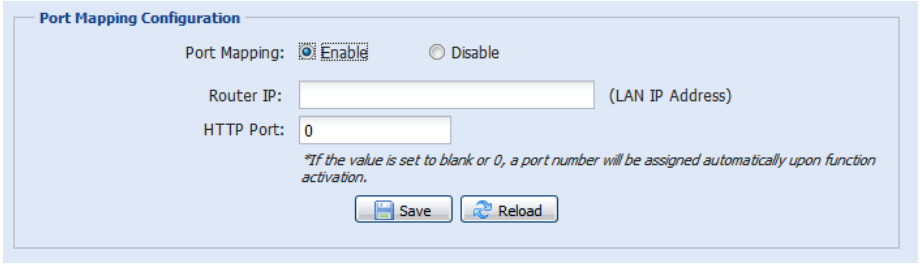
Port Mapping (Available only in UPnP)

This function can eliminate the need to additionally access the router for port forwarding.

For details, please refer to “Advanced Network Setup” from www.surveillance-download.com/user/m521.swf

Note: Before using this function, make sure your router supports UPnP, and this function is enabled. If not, please access your router additionally for port forwarding.

When “Port Mapping” is set to “Enable”, the system will automatically assign an IP address or port number for you if no IP address or port number is entered.



Note: When the configurations are saved successfully, you’ll see a message indicating the IP address and port number assigned to this network camera.

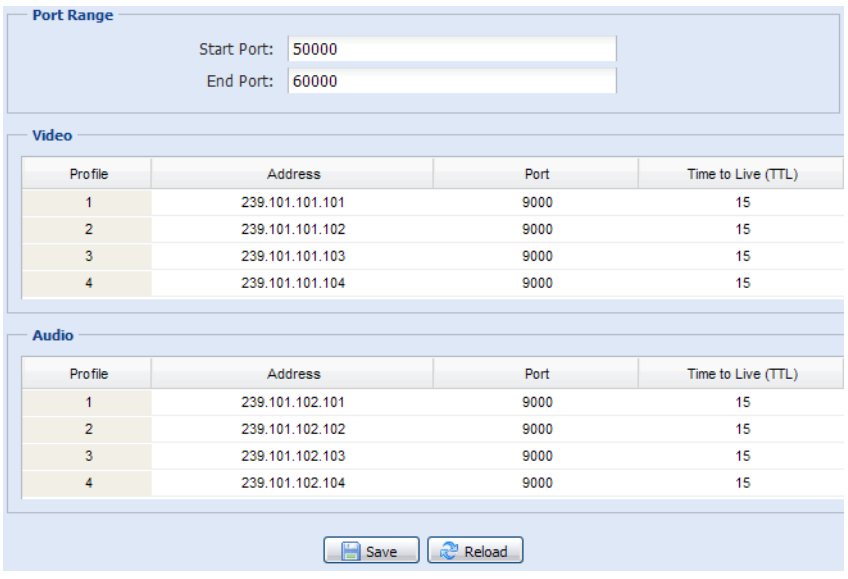
3.2.10 RTP

The Real-time Transport Protocol (RTP) is an Internet protocol standard to manage the real-time transmission of multimedia, such as VLC player.

The media player you want to use for remote access must support RTP transmission for this function to work normally.

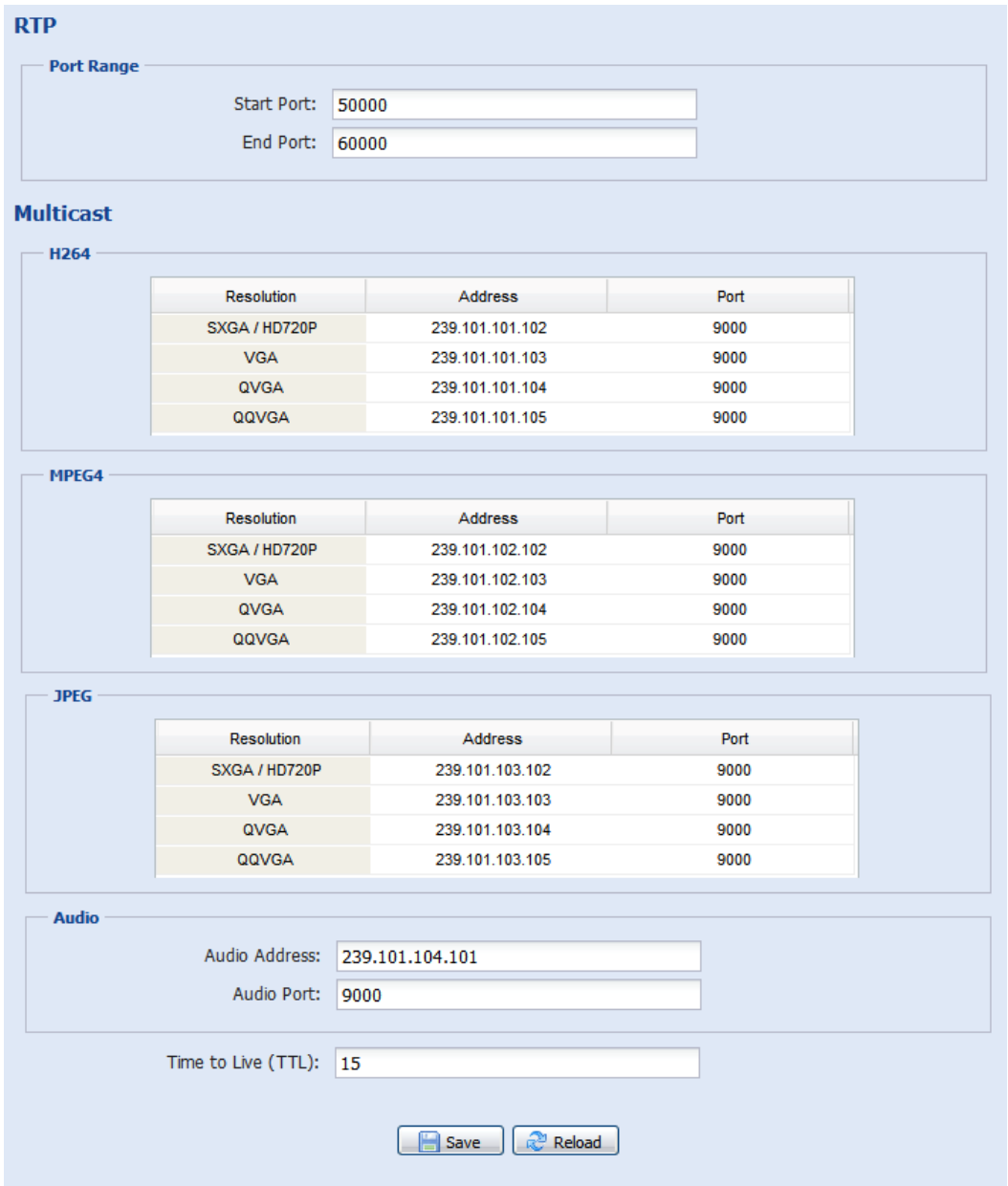
Note: When you’re about to end the remote access, please press the stop button on your media player first, and then close the program. This is to ensure the server receives the stop command, and also help to protect the server from redundant data transmission.

- Type1



Function	Description
■ **Port Range** The port range used by RTP is limited, and preserving 100 ports between the start port and end port is necessary.	
Start Port	The range of the start port is 1024 ~ 65434.
End Port	The range of the end port is 1124 ~ 65534.
■ **Video**	
Address and port for video transmission	Set a specific address and port for multicast of profile 1 ~ 4. The range of the address is limited between 224.0.0.1 ~ 239.255.255.255. The port for multicast must be an even number.
■ **Audio**	
Address and port for audio transmission	Set a specific address and port for multicast of audio. The range of the address is limited between 224.0.0.1 ~ 239.255.255.255. The port for multicast must be an even number.

➢ Type 2



Function	Description
■ **Port Range** The port range used by RTP is limited, and preserving 100 ports between the start port and end port is necessary.	
Start Port	The range of the start port is 1024 ~ 65434.
End Port	The range of the end port is 1124 ~ 65534.
■ **Multicast**	
Address and port for H264 / MPEG4 / JPEG transmission	Set a specific address and port for multicast of each stream format (H264/ MPEG4/ JPEG). The range of the address is limited between 224.0.0.1 ~ 239.255.255.255. The port for multicast must be an even number.
Address and port for audio transmission	Set a specific address and port for multicast of audio. The range of the address is limited between 224.0.0.1 ~ 239.255.255.255. The port for multicast must be an even number.
Time to Live (TTL)	The range of Time to Live of the package is between 1 ~ 255. As soon as Time to Live of the package is 0, it will be dropped.

3.3 Camera

3.3.1 Camera (For selected models only)

Rename the camera, and change the place where the camera name is shown on the screen, UP-LEFT / UP-RIGHT / DOWN-LEFT / DOWN-RIGHT. "Snapshot Path" is used to specify the path to save snapshot files.

Type 1



Type 2



3.3.2 Preset (For selected models only)

Note: Before using this function, make sure the DPTZ function is enabled.

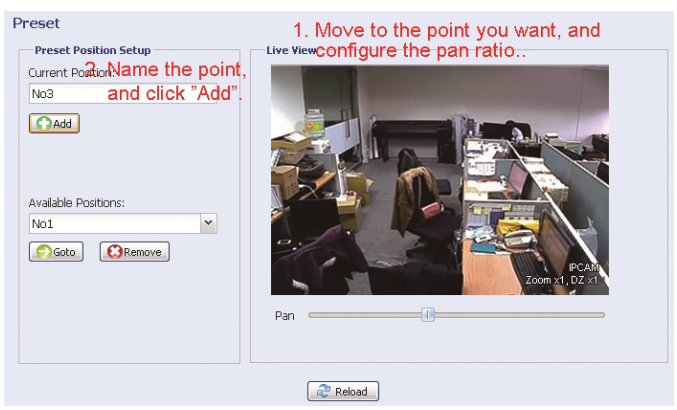
You can set new preset points (up to 16) or check existing points here.

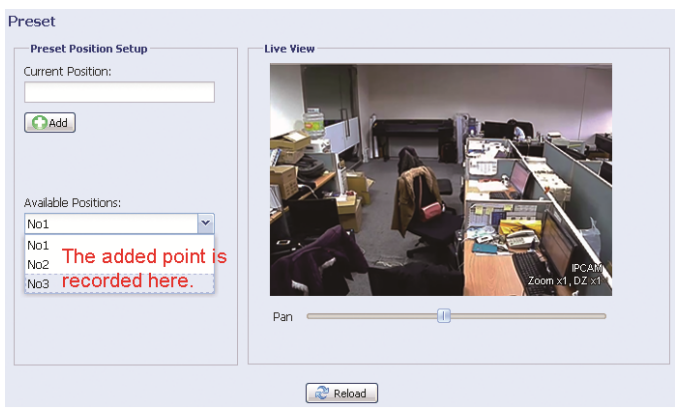
How to set a new preset point

Step1: Click DPTZ icon.

Step2: Click to where you want to see, and you'll get a 5x zoom-in image. To slightly zoom out, draw a square from the bottom right to top left, and you'll get a 3x image. Draw the square again and you'll return to the original size.

Step3: In "Current Position", give a name to this point, and click "Add".





How to check an existing preset point

In "Available Positions", select the name of the point you want to check from the drop-down list, and click "Goto". You will see the camera view on the right side moving to the point it's recorded.

How to delete an existing preset point

In "Available Positions", select the name of the point you want to check from the drop-down list, and click "Remove".

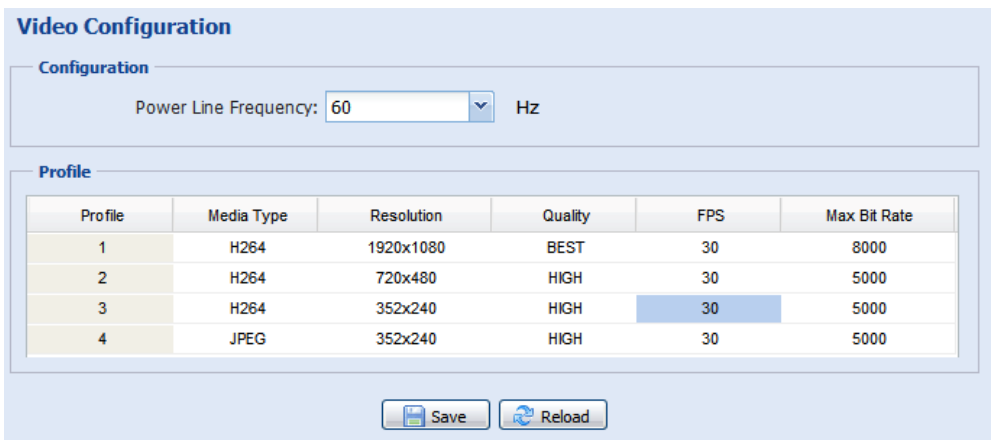
3.3.3 Video

Adjust video-related settings in different video format.

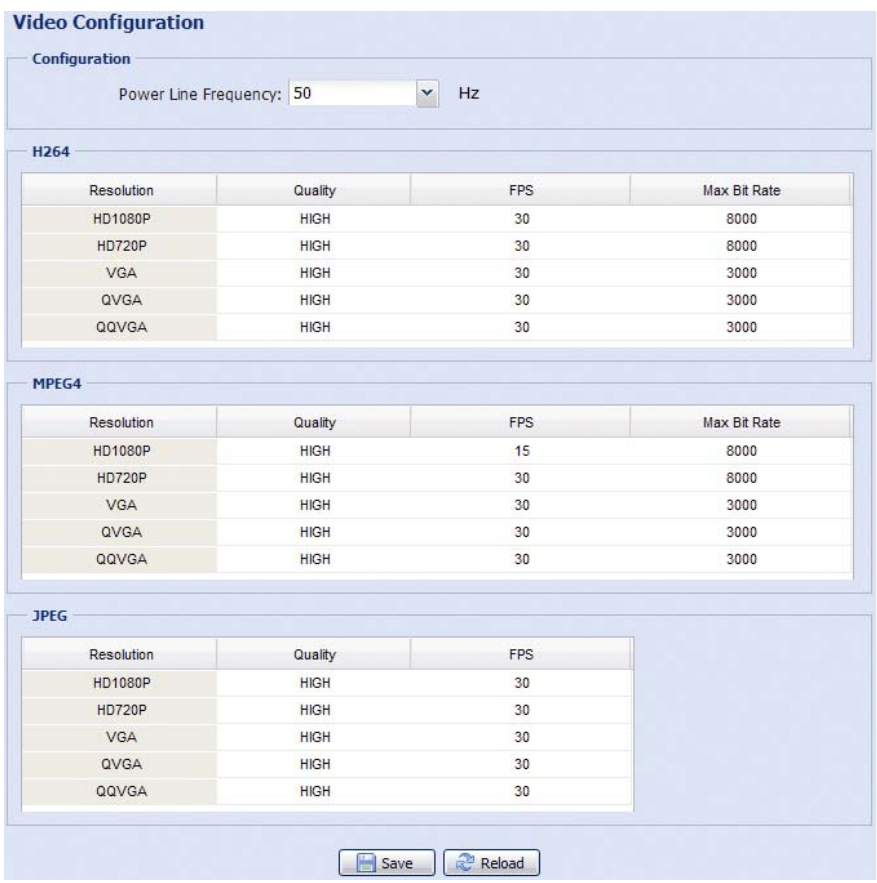
- “Quality” is related to image clearness.
- “FPS” is related to the fluency of the video. The more the FPS, the more fluent the video.
- “Max Bit Rate” is the maximum limitation of data transmission in the selected image format and resolution.

Note: QQVGA is for mobile surveillance only.

➢ Type 1



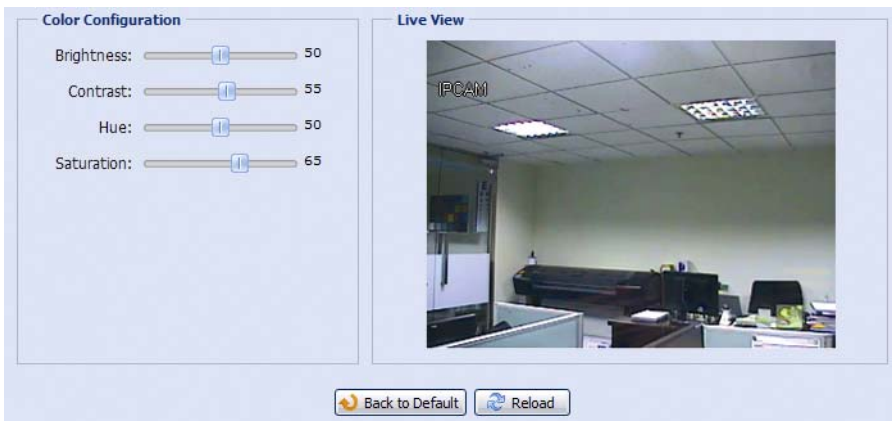
➢ Type 2



3.3.3 Color

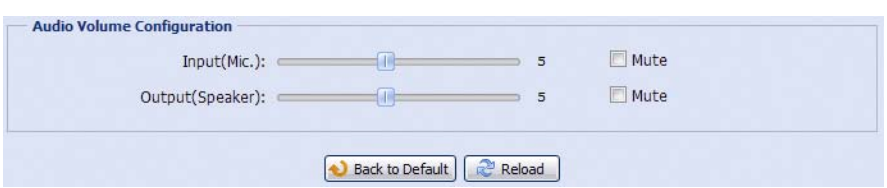
Adjust the color performance from Brightness, Contract, Hue and Saturation. Click and drag the slider to preview the color change on the right side of ths page and adjust the image color.

To restore the default values, click “Back to Default”



3.3.4 Audio (For selected models only)

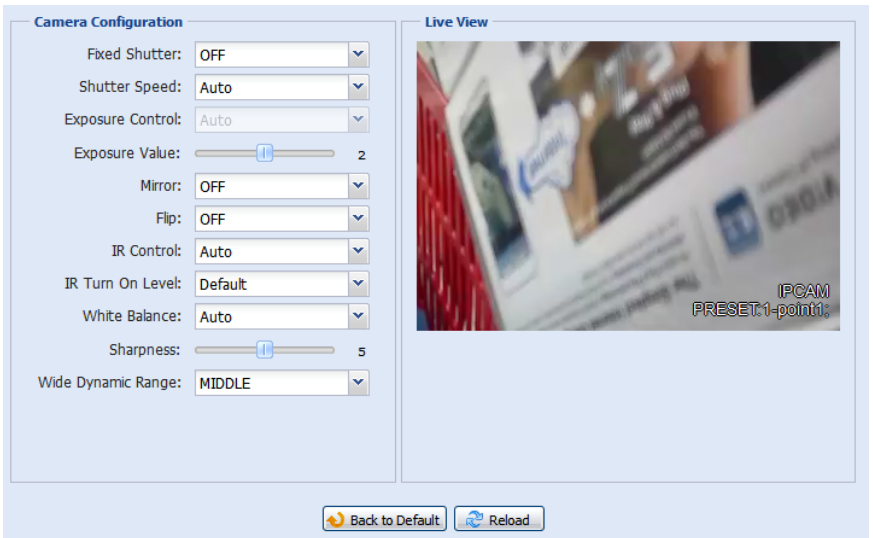
Drag the slider to adjust the volume of the microphone and speaker.



3.3.5 Advanced

Adjust the camera parameters if necessary.

Note: The functions available depend on the model number used.

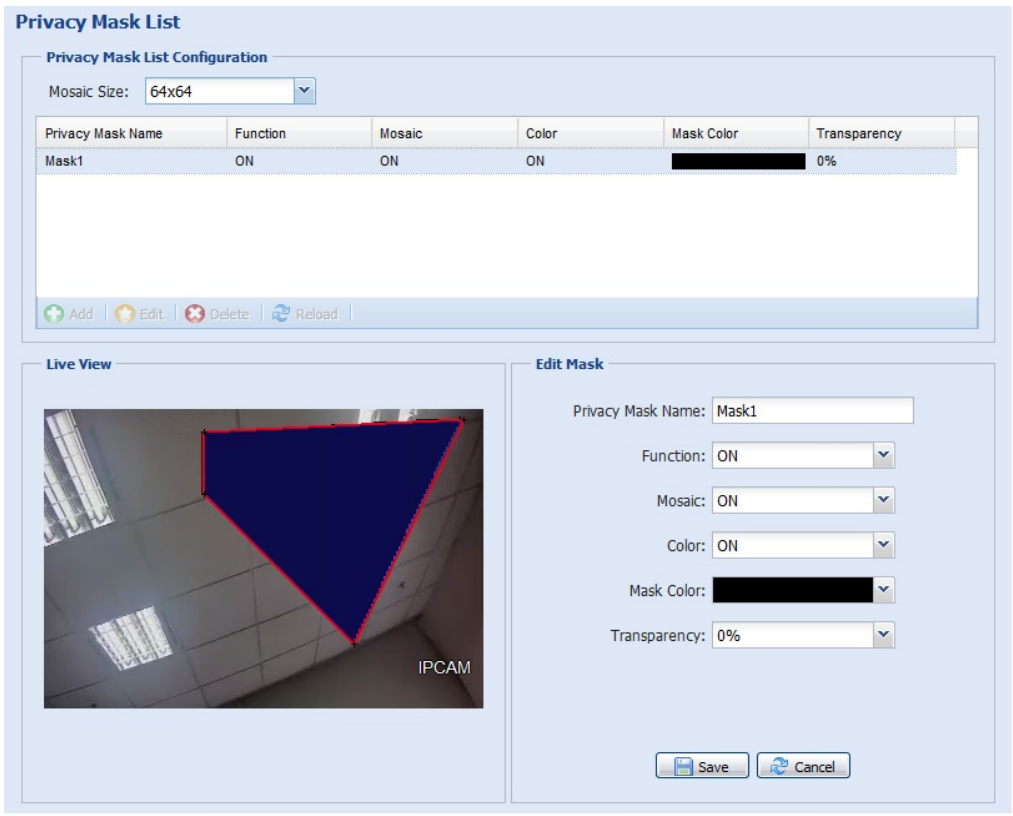


Item	Description
Fixed Shutter	Shutter Speed is a function that can adjust the duration of the electronic shutter to produce optimum image quality. Select the shutter speed suitable for your environment.
Shutter Speed	Select the shutter speed suitable for your environment. A slower shutter speed in dark conditions will help to produce a brighter image, but will produce fewer frames per second, which may cause images to get blurry during motion. ● When “Auto” is selected, the iris mode is “AES”. ● When a certain speed is selected, the iris mode is switched to “AI”, and the image brightness is available to adjust from “IRIS”.
Exposure Control	This function is used to synchronize the shutter time to the fluorescent light to suppress image flickering.
Exposure Value	Drag the slider to adjust the exposure level from 0 ~ 4.
Mirror	Select “ON” to rotate the images horizontally based on your installation situation when necessary.
Flip	Select “ON” to rotate the image 180° when necessary.
IR Control	Select “Auto” to automatically enable IR LEDs at night or in the dark environment, “On” to always enable IR LEDs, or “OFF” to disable this function.
IR Enhanced	Select “On” to enhance IR LEDs performance.

Item	Description
IR Turn On Level	Select the level for IR light to activate.
White Balance	Process the current image to retain color balance over a color temperature range. The options are: Auto, 2500K, 3200K, 4200K, 5800K, 9500K.
Sharpness	Sharpness enhances the clarity of image detail by adjusting the aperture and sharpening the edges in the pictures. Hold and drag the slider to adjust the level of sharpness from 0 ~ 100. The higher the value, the sharper the image.
Wide Dynamic Range*	Wide Dynamic Range (WDR) is used when users need to increase image recognizability in overexposure and dark areas. The options are: LOW / MIDDLE / HIGH / OFF

3.3.6 Privacy Mask (For selected models only)

You can cover certain areas on the camera image with privacy masks.



Item	Description
Mosaic Size	Choose the mosaic size of the privacy mask. The options are: 8x8, 32x32, and 64x64.
Privacy Mask Name	Name your privacy mask.
Function	Select “On” to enable the privacy mask function.
Mosaic	Select “ON” to have the mosaic effect.
Color	Select “ON” to color the privacy mask. In the meantime, you can’t see the mosaic effect.
Mask Color	Select the color for the privacy mask.
Transparency	Select the transparency for your privacy mask. The options are: 0%, 25%, 50%, and 100%.

3.4 Record

3.4.1 Record

In “Record Configuration”, you can:

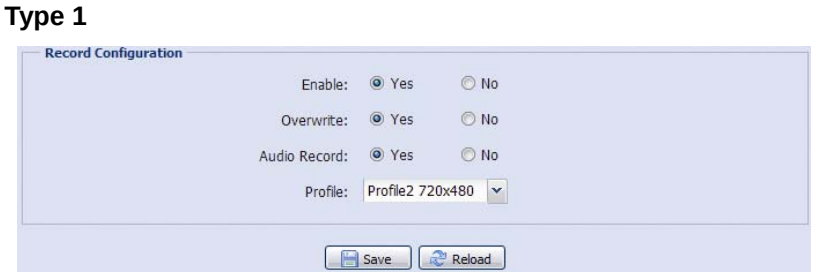
- Enable or disable the alarm record function. When “Enable” is set to “No”, the alarm record function is disabled even if you enable it in other configuration pages.
- Select if the data should be overwritten when the memory storage is full.
- Enable or disable the audio record function.

Note: Audio recording is available for selected models only.

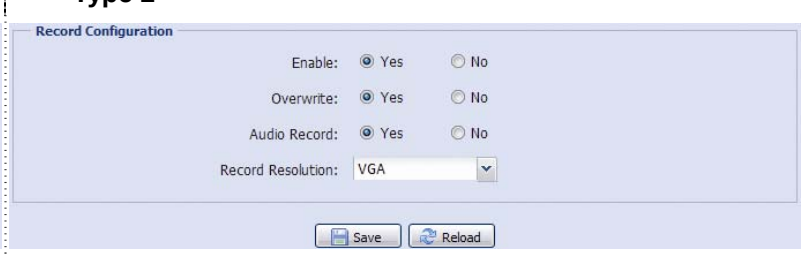
- Select the video resolution for event recording.

Note: The higher resolution you choose, the more accuracy and higher image quality the recording will be, but the faster the memory storage is consumed and become full

Type 1



Type 2

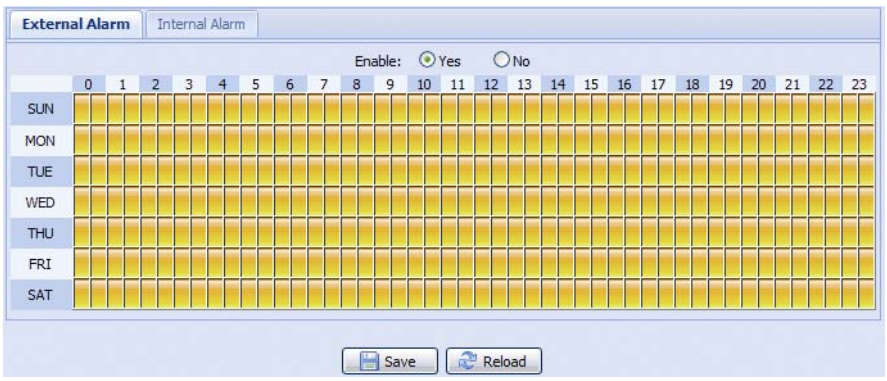


3.4.2 Record Timer

To schedule alarm recording, enable it, and select the day and time for recording.

Internal alarm is available for selected models only.

Note: The timer must be enabled for the record function to work properly.



3.5 Storage

3.5.1 Memory

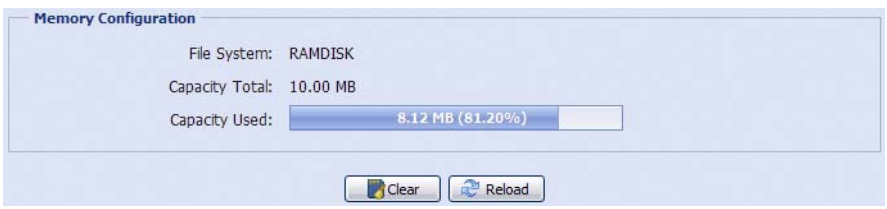
In “Memory”, you can check the remaining capacity for recording, or clear all recorded data saved if needed.

Note: The recorded data will be removed also when you reset or reboot this camera.

Note: To know how and where to insert a micro SD card, please refer to “1.7 Insert a Micro SD card (For selected models only)” at page 4. To know the compatible list of micro SD cards, please refer to “APPENDIX 7 MICRO SD CARD COMPATIBLE LIST” at page 40.

Note: To save more recorded data, it’s recommended to use this camera with the compatible NVR.

Note: To know the total recording time per recording resolution, please refer to “APPENDIX 6 RECORDING TIME TABLE” at page 39.

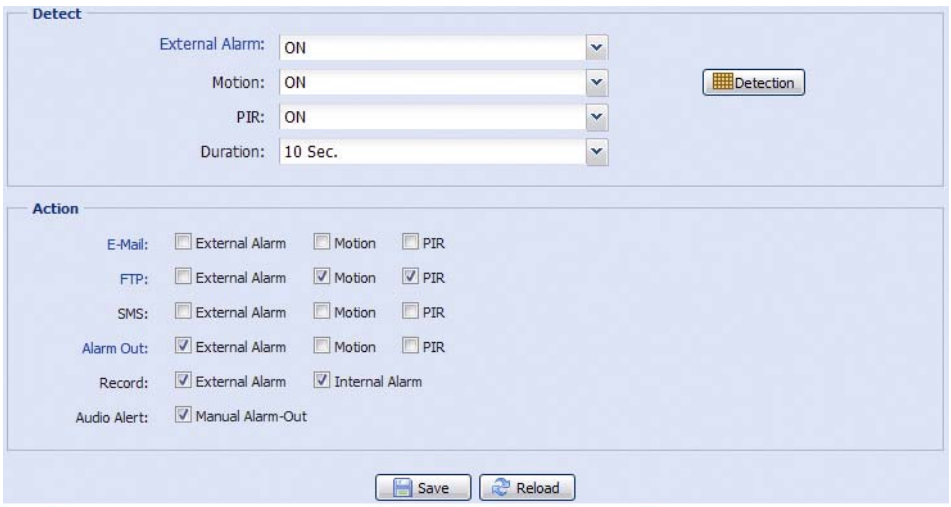


The total capacity for recording may vary depending on different models. Please check the actual display of your model.

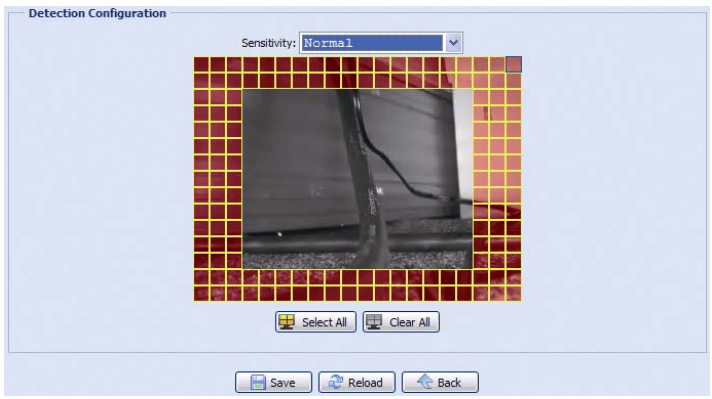
3.6 Trigger

3.6.1 Trigger

You can configure how this camera reacts when there's an alarm, a motion or a PIR event.



◆ Detect

Item	Description
External Alarm	Enable or disable detection from external alarm-in device, and click the title "External Alarm" (in blue) to set "N.O." or "N.C." depending on the configuration of your alarm-in device.
Motion	Enable or disable motion detection. *Motion detection is not supported when the stream format is Motion JPEG.*
	When "Enable" is selected, click "Detection" to enter the motion detection area setting page as follows: 
	Sensitivity: Set the detection sensitivity from the drop-down list: High, Normal or Low.
	Area Setting: Set the motion detection area by selecting the area grids with your mouse. Pink grids represent the area that is not being detected while the transparent grids are the area under detection. You can set multiple areas under detection. Click "Clear All" to set the whole area undetected. Click "Select All" to set the whole area under detection.
PIR*	Enable (ON) or disable (OFF) PIR detection.
Duration	Set the duration time for trigger recording (5 / 10 / 20 / 40 seconds).

*Selected models only

◆ Action

Here defines how the camera delivers alerts to you for any event.

Item	Description
E-Mail	Select the event type you want to receive E-mail notifications when it occurs. Then, click the title “E-Mail” (in blue) to configure the media type (H264 / JPEG / MPEG4), file format (AVC / AVI), and record time (1 ~ 5 seconds) for the event video clip. The camera will send the captured video clip to the E-mail address(s) you assigned in “Network” → “Mail” once the selected event type occurs.
FTP	Select the event type you want to receive FTP notifications when it occurs. Then, click the title “FTP” (in blue) to configure the media type (H264 / JPEG / MPEG4), file format (AVC / AVI), and record time (1 ~ 5 seconds) for the event video clip. The camera will upload the captured video clip to the FTP site you assigned in “Network” → “FTP” once the selected event type occurs.
SMS*	Select the event type you want to receive a text message when it occurs. The camera will send a text message to the mobile phone number you assigned in “Network” → “SMS” once the selected event type occurs.
Alarm Out	Select the event type you want to trigger the alarm-out device to work when it occurs. Then, click the title “Alarm Out” (in blue) to configure the trigger rule (LOW / HIGH).
Record	Select the event type you want to enable event recording when it occurs.
Audio Alert	Select the event type you want to enable audio alert when it occurs.

*Selected models only

3.7 General

3.7.1 General

To change the language of UI interface, select from the drop-down list in “Language”.

To allow the status LED indicators to show the status as indicated in “1.6 Status Indicator (For selected models only)” at page 2, select “Enable” in “Status LED Mode”; to hide the status, select “OFF”; to only show the error status, select “Temporary Disable”; to enable the privacy mode (for selected models only), select “Privacy”.

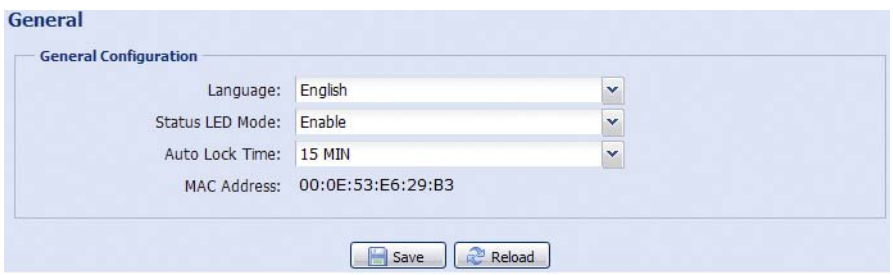
Note: LED indication is available for selected models only.

Note: With the privacy mode on, both the status lights will be off when the camera functions normally. To know how the status indicators blink in this mode, please refer to **1.6 Status Indicator (For selected models only)** at page 2.

Note: The status LED mode will be restored to “Enable” after camera reboot when “Temporary OFF” is selected.

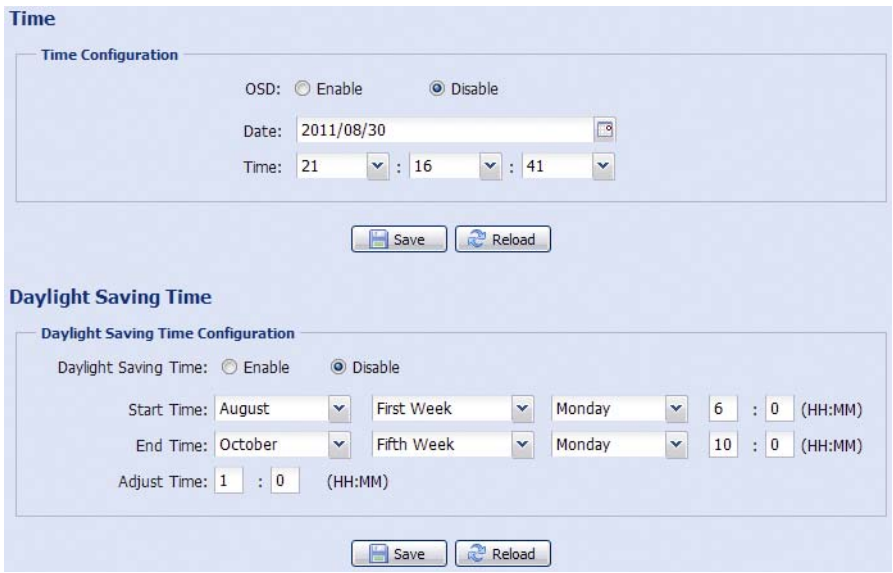
To lock camera access when it’s not used after the specified time, select “5 MIN”, “15 MIN” or “30 MIN” from the drop-down list of “Auto Lock Time”, or select “NEVER” to disable this function.

Note: When the camera access is locked after the specified time, to resume camera access, please enter the password.



3.7.2 Time

Set daylight saving time and the current time, and click “Save” to confirm.

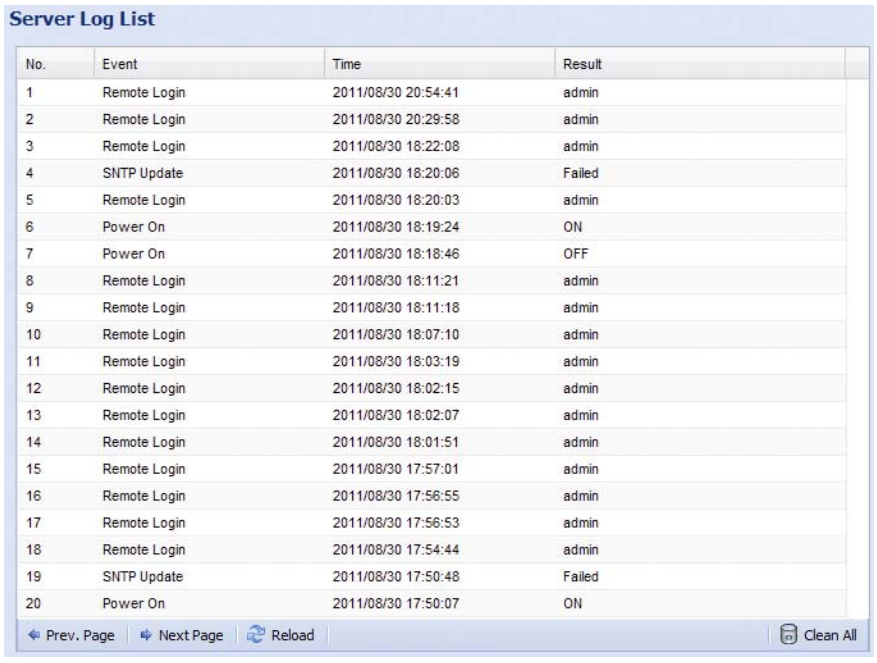


Function	Description
■ **Time Configuration**	
Date	Set the current date.
Time	Set the current time.
■ **Daylight Saving Time Configuration**	
Daylight Saving Time	Specify whether to use daylight saving time (Enable / Disable).
	If this function is enabled, set the time period (Start Time / End Time), and adjust the daylight saving time in hours (Adjust Time).

3.7.3 Server Log

To quickly search the system logs you want by event type, click “Prev. Page” or “Next Page” to find the logs you want, or check the event type(s) and click “Reload” to start searching.

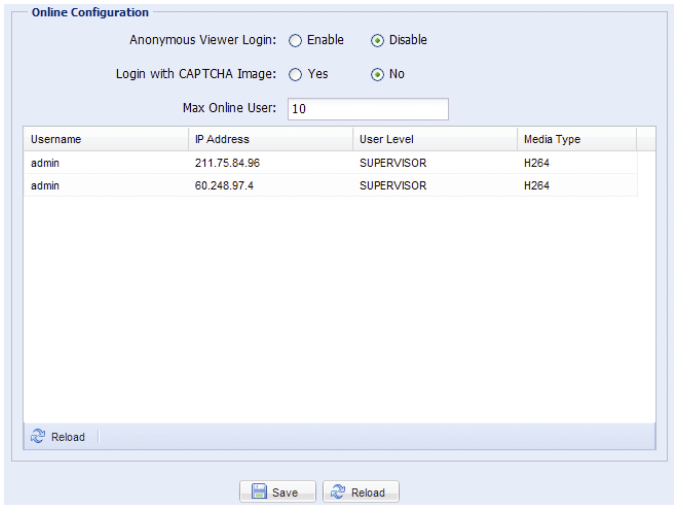
To clear all system event logs, click “Clear All”.



3.7.4 Online

You can check the current online user(s) with respective online information. To refresh the list, click “Reload”.

- To allow anonymous login, select “Enable” in “Anonymous Viewer Login”.
- To disable image code verification at login, select “No” in “Login with CAPTCHA Image”.

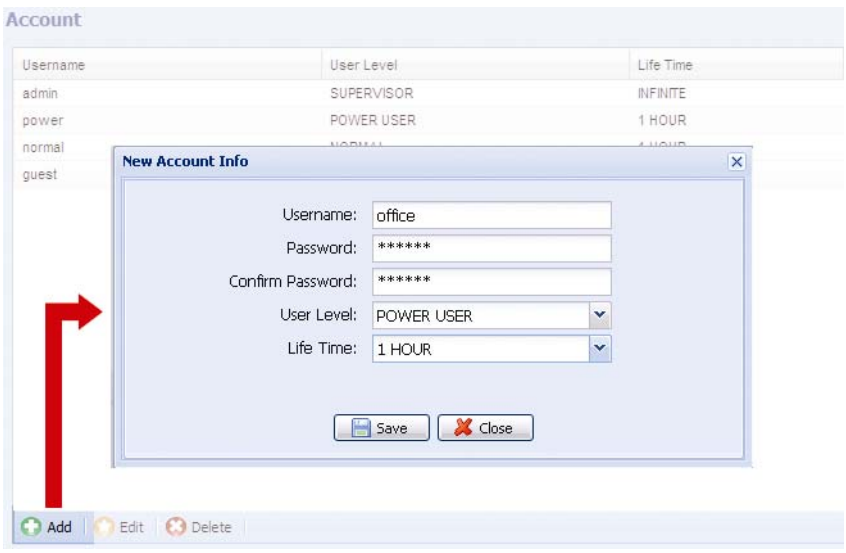


3.7.5 Account

You can create a new account with different user access privilege, or delete or modify an existing account setting.

How to create a new account

Step1: Click “New”, and fill in the following columns.



Column	Description
User Name	Set a user name that will be used for camera access. The user name allows up to 16 alphanumeric characters.
Password	Set the password that will be used for remote login. The password allows up to 16 alphanumeric characters.
Confirm Password	Enter the password again to confirm.
User Level	Set the security level of an account to give the permission to control different functions. There are four user levels: SUPERVISOR, POWER USER, NORMAL USER and GUEST.
Life Time	Select how long this account is allowed to stay online (1 MIN / 5 MIN / 10 MIN / 1 HOUR / 1 DAY / INFINITE)

Step2: Then, click “Save” to save your setting and create a new account.

How to modify or delete an existing account

Step1: Select the account you want to modify or delete.

Step2: To modify the account, click “Edit” to change the settings, and click “Save”.
To remove the account, click “Delete”.

Note: It’s not allowed to remove an account when there’s only one account in the account list.

3.7.6 Google Maps

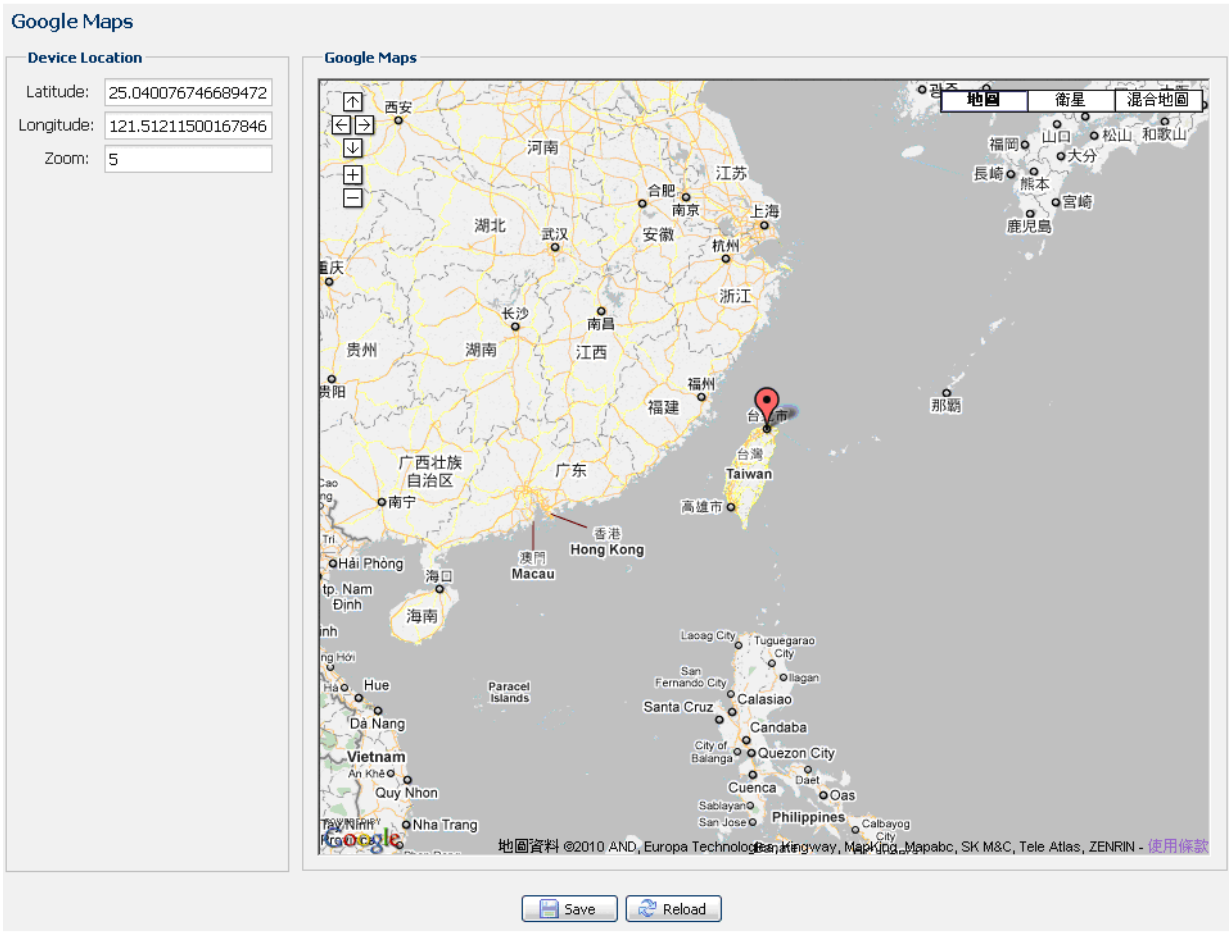
This function is used to let you know where the network camera is.

The system will prompt you to apply a Goole Maps Key if your access is denied. Please follow the instructions below when you're denied:

Step1: Click "Sign up for a Google Maps key" to enter the application page.

Step2: Check the terms and conditions, and enter the IP address of the network camera. Then, click "Generate API Key".

Step3: Copy the generated API key, and click "Update Google Maps Key" on the web browser to paste it.



3.7.7 Maintenance

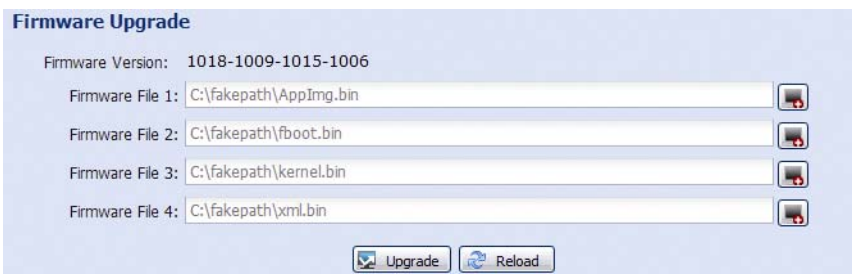
Firmware Upgrade

This function is used when users need to upgrade the camera for function scalability.

Note: Before using this function, make sure you have the correct upgrade files provided by your installer or distributor.

Note: The event videos saved in the camera will be removed after firmware upgrade. Make sure you've copied important events to your PC before firmware upgrade.

Step1: Select "" to browse to where you save the upgrade files, and select them one by one until all files are selected (up to four files).



Step2: Select “Upgrade” to start system upgrading.

Note: You’ll be prompted to keep current configurations. It’s recommended to keep them, or all configurations will be restored to default values after upgrade.

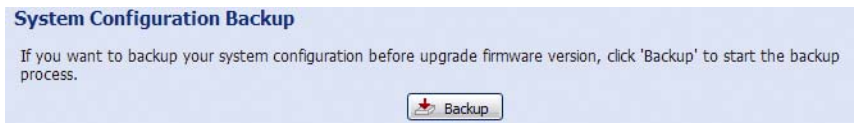
Note: It takes a few minutes to finish the upgrade process. Do not disconnect the power during firmware upgrade, or the upgrade may be failed. The camera will reboot after the upgrade.

System Configuration Backup

This function is used to copy your system configuration to a “System.bin” file.

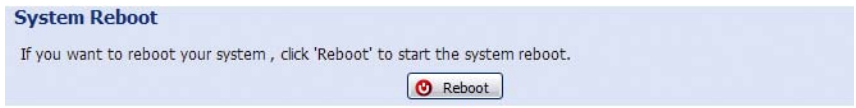
You may import the same system configuration to another camera, or restore your system configuration when the camera is reset to default values.

Select “System.bin” in “Firmware Upgrade”, and select “Upgrade” to import the system configuration.



System Reboot

Select “Reboot” to restart your camera if needed.



Player Download

To see the event video clips downloaded to your PC, you need to first install our own video player in your PC.

Select “Free Download” to download the video player, and double click the file to install it.



APPENDIX 1 PRODUCT SPECIFICATIONS

	Model 1	Model 2
■ Network		
Network Compression	H.264 / MJPEG	
Multiple Video Streaming (Encode Modes, IPS, Resolution)	4 (H.264, MJPEG)	
LAN Port	YES	
LAN Speed	10/100 Based-T Ethernet	
Supported Protocols	DDNS, PPPoE, DHCP, NTP, SNTP, TCP/IP, ICMP, SMTP, FTP, HTTP, RTP, RTSP, RTCP, IPv4, Bonjour, UPnP, DNS,UDP,IGMP, QoS	
Frame Rate	30 / 25fps	
Number of Online Users	10	
Security	(1) Multiple user access levels with password (2) IP address filtering (3) Digest authentication	
Remote Access	(1) Internet Explorer on Windows operating system (2) EagleEyes on iOS & Android devices	
ONVIF Compatible	YES	
■ Camera		
Image Sensor	1/2.8" HD CMOS image sensor	
Video Resolution	1080P to CIF	
Min Illumination	0.1 Lux / F1.5, 0 Lux (LED ON)	
Shutter Speed	--	1/10,000 ~ 1/7.5 (Slow shutter)
S/N Ratio	More than 48dB (AGC off)	
Lens	f3.8mm / F1.5	
Viewing Angle	83.2° (Diagonal) / 73.2° (Horizontal) / 42.8° (Vertical)	
IR LED	1 unit (15 meters)	
IR Shift	YES	
PIR Sensor	Detection Range 76° wide angle with up to 5m long distance at 2.5m height (under 30℃)	
White Balance	ATW	
AGC	Auto	
IRIS Mode	AES	
POE	YES (IEEE 802.3af)	
External Alarm I/O	YES (1 in 1 out)	
Micro SD Card Slot	YES	
Smart Light Control	YES	
WDR	YES	
Privacy Mask	NO	YES
Power Source (±10%)	12V / 1A	
Current Consumption (±10%)	--	400mA
Operating Temperature	0℃~40℃	
■ Others		
Mobile Surveillance	iPad / iPhone / Android mobile device	
RTC (real-time clock)	YES	
Motion Detection	YES	
Digital Pan / Tilt / Zoom	YES	
3 Axis	YES	
Event Notification	FTP / Email / SMS	
Minimum Web Browsing Requirements	• Intel core i3 or higher, or equivalent AMD • 2GB RAM • AGP graphics card, Direct Draw, 32MB RAM • Windows 7, Windows Vista & Windows XP, DirectX 9.0 or later • Internet Explorer 7.x or later	

* The specifications are subject to change without notice. ** Dimensional tolerance: ± 5mm

	Model 3	Model 4
■ Network		
Network Compression	H.264 / MPEG4 / MJPEG	H.264 / MJPEG
Multiple Video Streaming (Encode Modes, IPS, Resolution)	4 (H.264, MPEG4, MJPEG)	4 (H.264, MJPEG)
LAN Port	YES	
LAN Speed	10/100 Based-T Ethernet	
Supported Protocols	DDNS, PPPoE, DHCP, NTP, SNTP, TCP/IP, ICMP, SMTP, FTP, HTTP, RTP, RTSP, RTCP,IPv4, Bonjour, UPnP, DNS,UDP,IGMP, QoS	
Frame Rate	30 / 25fps	
Number of Online Users	10	
Security	(1) Multiple user access levels with password (2) IP address filtering (3) Digest authentication	
Remote Access	(1) Internet Explorer on Windows operating system (2) EagleEyes on iOS & Android devices	
ONVIF Compatible	YES	
■ Camera		
Image Sensor	1/4" CMOS image sensor	1/2.8" CMOS image sensor
Video Resolution	SXGA to QQVGA	1080P to CIF
Min Illumination	1 Lux / F1.5	0.1 Lux / F1.4, 0 Lux (LED ON)
Shutter Speed	1/2 to 1/10,000 sec	1/10,000 ~ 1/7.5 (Slow shutter)
S/N Ratio	More than 48dB (AGC off)	
Lens	f3.8mm / F1.5	f2.8 ~ 12mm / F1.4 ~ F2.8
Viewing Angle	62.7° (Diagonal) / 53.7° (Horizontal) / 34.1° (Vertical)	Wide: 97.4° (Horizontal) / 58.1° (Vertical) / 111.7° (Diagonal) Tele: 27.1° (Horizontal) / 15.2° (Vertical) / ° (Diagonal)
IR LED	--	3 units (Default: up to 30 meters; IR Enhanced Mode: up to 50 meters)
IR Shift	--	YES
White Balance	ATW	
AGC	Auto	
IRIS Mode	AES	
POE	YES (IEEE 802.3af)	
External Alarm I/O	YES (1 in 1 out)	
Micro SD Card Slot	YES	
Vandal Resistance	IK08	IK10
Weather-proof	--	IP66
WDR	--	YES
Smart Light Control	--	YES
Power Source (±10%)	12V / 1A	12V / 1.5A
Current Consumption (±10%)	203mA	849mA
Operating Temperature	0℃~40℃	-20℃~40℃
■ Others		
Mobile Surveillance	iPad / iPhone / Android mobile device	
RTC (real-time clock)	YES	
Privacy Mask	NO	YES
Motion Detection	YES	
Digital Pan / Tilt / Zoom	YES	
Event Notification	FTP / Email / SMS	
Minimum Web Browsing Requirements	• Intel core i3 or higher, or equivalent AMD • 2GB RAM • AGP graphics card, Direct Draw, 32MB RAM • Windows 7, Windows Vista & Windows XP, DirectX 9.0 or later • Internet Explorer 7.x or later	

* The specifications are subject to change without notice.

** Dimensional tolerance: ± 5mm

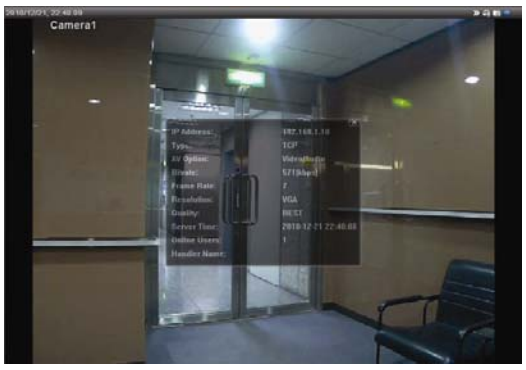
APPENDIX 2 BIT RATE TABLE FOR REFERENCE

The data below is for reference only.

The bit rates listed here may vary depending on the resolution, image quality & frame rate you choose, the complexity of your monitoring area, and how often the moving objects show in your monitoring area.

Testing Environment

- Place: Office Entrance
- Network translation: H.264
- Camera type: Megapixel camera



Static: No one coming in and out



Dynamic: One or two people coming in and out

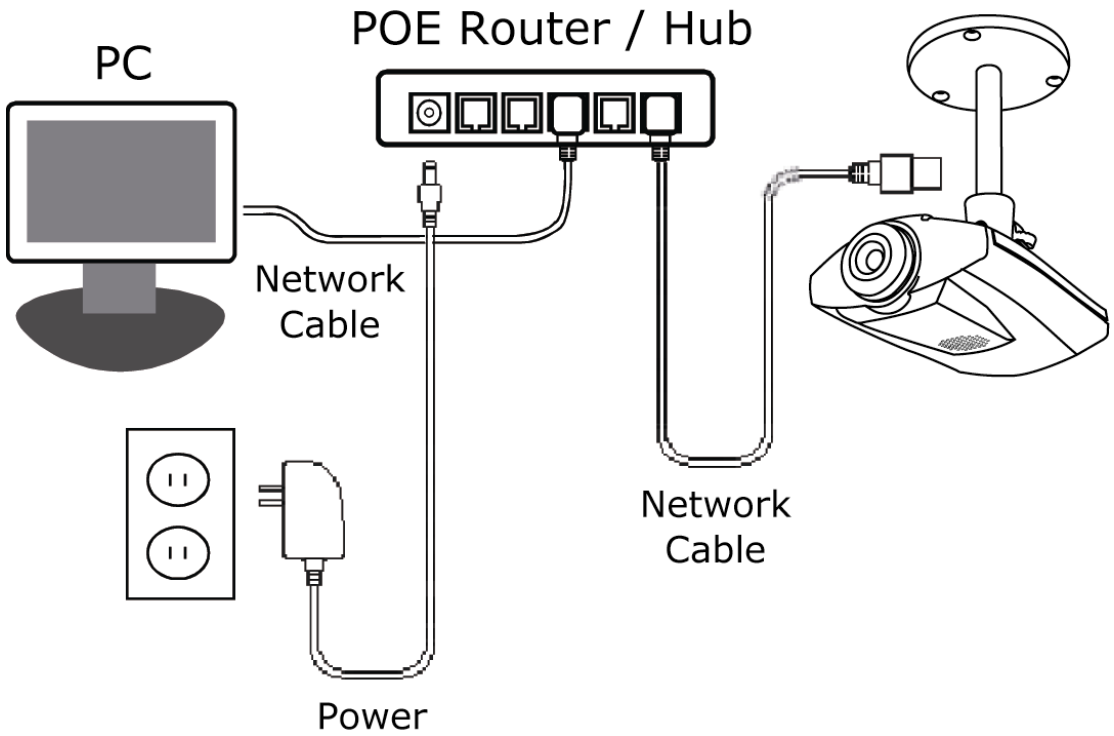
Resolution	Quality	Frame Rate	(Dynamic) kbps	(Static) kbps
SXGA	Best	FULL	3253	3216
	High		2375	2160
	Normal		1571	1266
	Basic		1465	873
VGA	Best		2010	1261
	High		1042	1034
	Normal		685	572
	Basic		457	350
QVGA	Best		646	366
	High		482	350
	Normal		302	286
	Basic		168	161
SXGA	Best	1/4	1163	1076
	High		989	715
	Normal		855	534
	Basic		719	443
VGA	Best		789	571
	High		451	447
	Normal		349	237
	Basic		217	165
QVGA	Best		269	147
	High		182	131
	Normal		164	113
	Basic		97	71

Resolution	Quality	Frame Rate	(Dynamic) kbps	(Static) kbps
SXGA	Best	1/15	581	374
	High		405	342
	Normal		487	248
	Basic		337	141
VGA	Best		358	79
	High		201	63
	Normal		180	28
	Basic		92	15
QVGA	Best		111	84
	High		99	68
	Normal		97	54
	Basic		58	42

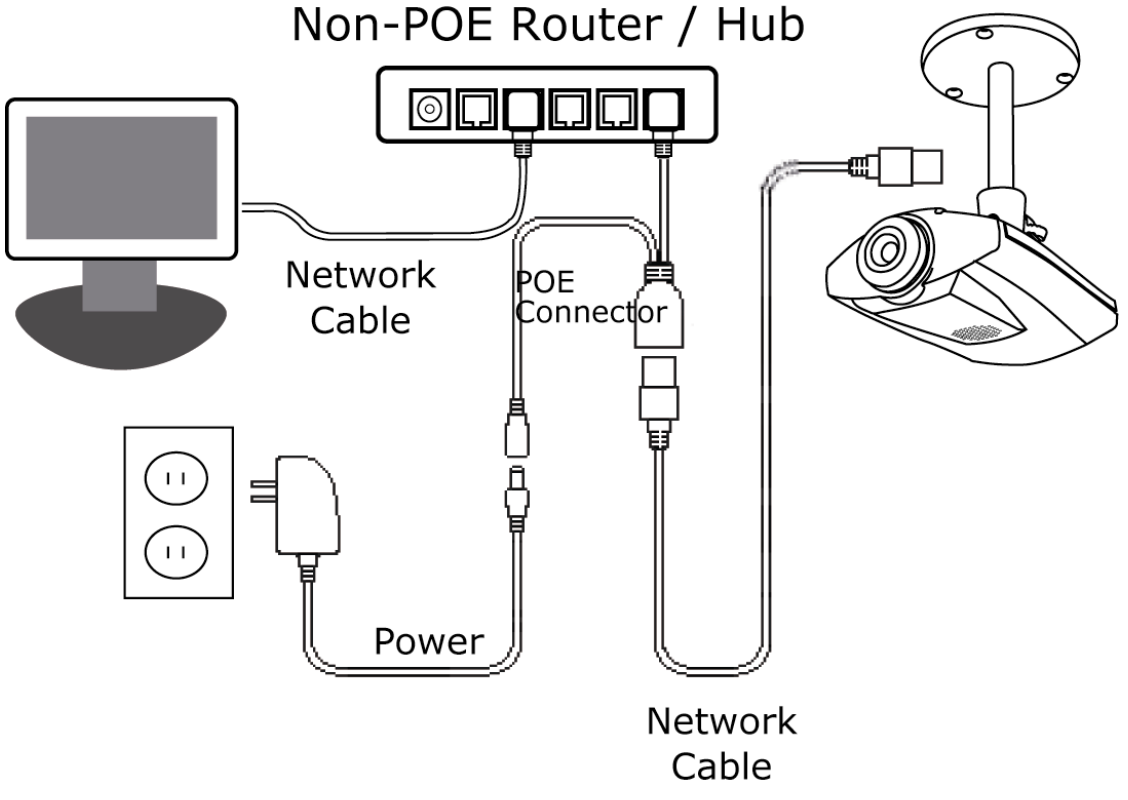
APPENDIX 3 POE CONNECTION

This device supports PoE (Power-over-Ethernet), developed by the IEEE802.3af task force, and power can be supplied over the same network (Ethernet) cable as the one used to connect to Internet. No power cable is needed. Below shows two examples of POE application for reference.

- When your router / hub supports POE connection



- When your router / hub doesn't support POE connection (An optional POE connected required)



APPENDIX 4 API ID APPLICATION FOR SMS MESSAGING

To allow the camera automatically sending a text message when an event happens, you need to apply an API ID from a mobile messaging company first, such as Clickatell or EVERY8D.

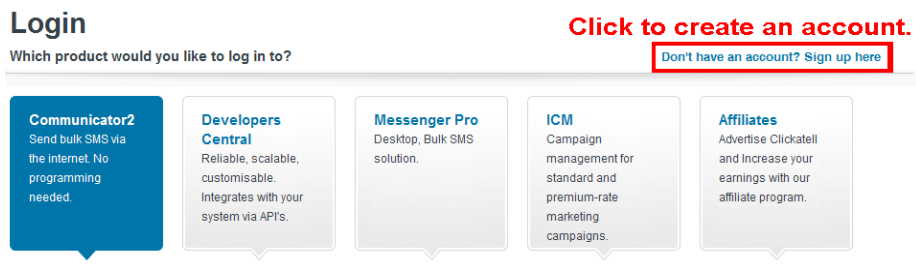
Below shows an example of how to get an API ID from Clickatell.

Note: The SMS messaging may not be totally free. Please check the charge policy of the messaging service you use.

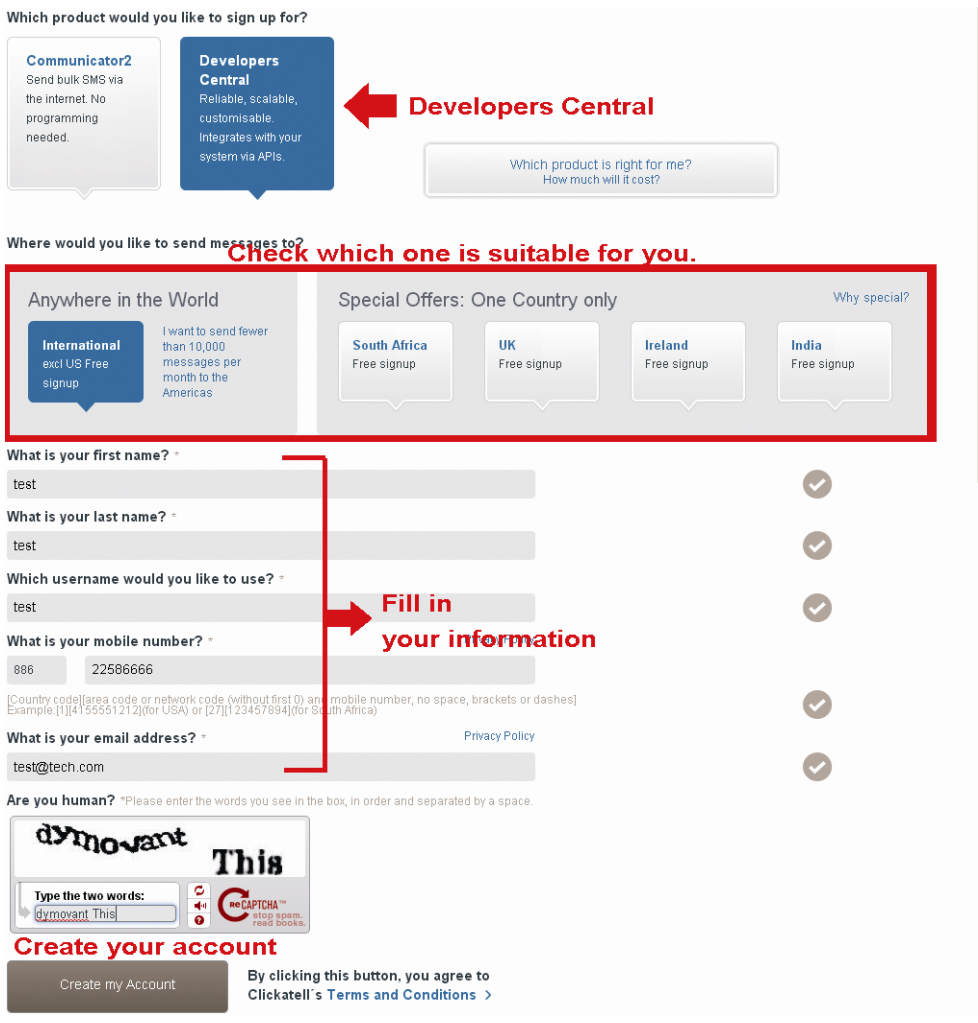
Note: The instructions below are for reference only and may vary when Clickatell's official website is updated.

Please follow the steps below for application.

Step1: Go to http://www.clickatell.com/login.php. Sign up an account first.



Step2: Select "Developers Central", select the location where you want to use this service, and fill in your information to create an account.

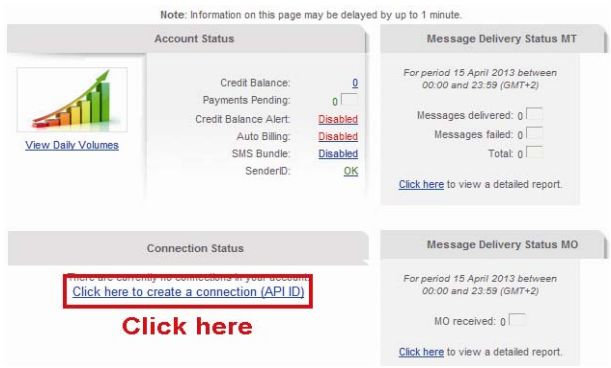


Step3: When the account is created, the system will automatically send an Email to your specified Email address with the user name, password, and client ID used to log into the service.

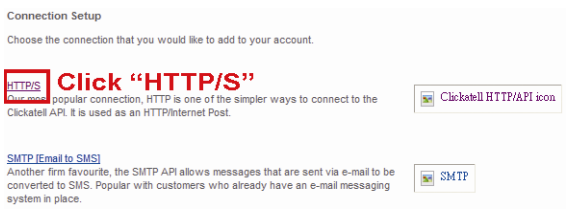
Step4: Click the link within the email to log in, and you will be prompted to validate your mobile phone number. Select "SEND ACTIVATION CODE". The system will send an activation code to that number for verification. Check if you receive a text message from Clickatell, and enter the activation code.



Step4: In your account, find “Connection Status” and create a connection (API ID).



Step5: Select “HTTP/S”.

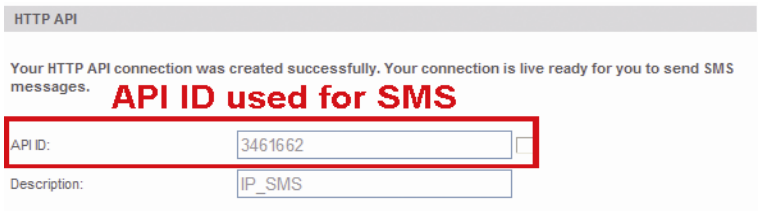


Give a meaning name for this connection, and click “Submit and Get API ID”.



Step5: An API ID will be generated as follows.

Note: Note down the API ID for SMS notification setting later.



APPENDIX 5 Q&A

For more details about EagleEyes Q&A, please visit our official website: www.eagleeyescctv.com.

Question	Answer
I can connect to this camera in my house or office where it's installed with wireless network. But when I leave my house or office, I can't connect to it from my mobile phone (with 3G network), or other PC (connected to Internet). Why?	You didn't configure this camera to Internet, but only in LAN. Please follow the steps in the advanced network setup guide downloadable from www.surveillance-download.com/user/m521.swf to complete network configurations, or it's recommended for you to check with your local installer or reseller for this service because it's usually hard for a person who doesn't have network knowledge to set network configurations.
My live images are not fluent. Why?	Image fluency could be affected by the local network upload bandwidth, router efficiency, client network download bandwidth, complexity of live view, and more. (Recommended) To have the best image fluency, select QVGA; to have the best image quality, select "HD1080P" or "SXVGA" based on the model you have; to have normal image fluency and quality, select "VGA".
The live video keeps flickering. Why?	Please try adjusting the power line frequency to "60 Hz" or "50 Hz" for the camera. For iPhone users, access the camera, and select "  " on the top right corner to enter IPCAM Configuration page. Then, go to "Advance Setup" → "Camera" to change setting. For access from Internet Explorer, log into the camera, and select "Config." → "Camera" → "Video".

APPENDIX 6 RECORDING TIME TABLE

Below shows the estimated total recording time for each recording resolution.

The recording time per resolution is the average value collected from the both alarm trigger conditions indicated in “Testing Environment”, and is for reference only.

The time may vary depending on the resolution, image quality & frame rate you choose, the complexity of your monitoring area, and how often the moving objects show in your monitoring area.

Testing Environment

- Place: Office
- Monitoring area: 1.5 meters away from the camera
- Alarm trigger conditions:
  (1) One person walks by the monitoring area and leaves immediately.
  (2) Two persons walk by the monitoring area. One goes away immediately, and the other one stays a while and goes away.

Recording Resolution	SXGA	VGA	QVGA
Recording time (second)	25	115	211

APPENDIX 7 MICRO SD CARD COMPATIBLE LIST

Manufacturer	Capacity	Class	Manufacturer	Capacity	Class
ADATA	2GB	--	Transcend	2GB	--
	4GB	Class 6		4GB	Class 2
Apacer	2GB	--		4GB	Class 4
	4GB	Class 4		4GB	Class 6
SanDisk	2GB	--		8GB	Class 6
	4GB	Class 4		16GB	Class 10
	8GB	Class 4	Kingston	2GB	--
	16GB	Class 4		4GB	Class 4
	32GB	Class 4		8GB	Class 4
Verico	2GB	--		32GB	Class 4
	4GB	Class 4		64GB	Class 10
	16GB	Class 10	TOSHIBA	16GB	Class 4
Silicon Power	64GB	--	TOPRAM	32GB	Class 10
Kingmax	64GB	--			